

ALL HANDS

Magazine of the U.S. Navy

August 1998

Tech WAR

Navy SEALs
Looking into the Future

The Masters Building Model Boats Lighting the Fire F/A-18E/F ITT
Sounds of Silence Operation: Manta Joined at the Zip Future Base

ALL HANDS

August

Number 976

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The first-ever Smart Base gives Sailors a glimpse of the future.

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On the Cover

With a growing arsenal of new weaponry – including digital cameras, laser pointers, mouth mikes, infrared scopes, laptop computers and portable satellite communications – Navy SEALs are boldly attacking the 21st century with new vision and enhanced capabilities.

Photo by JO1 Robert Benson



On the Back Cover

Members of SEAL Delivery Vehicle Team TWO conduct training operations in the Caribbean.

Photo by PH1(DV)
Andy McKaskle

Check us out Online at:



www.chinfo.navy.mil/navpalib/allhands/ah-top.html

THROUGH THE

LOOKING GLASS



USS *John F. Kennedy*
(CV 67) passes under the
Verrazano-Narrows Bridge on
her way to New York City
for Fleet Week '98.

Photos by PHAN Jennifer M. Beck
and PH2 Scott Moak (inset).





FLYING

FISH





USS *Columbus* (SSN 762), homeported at Naval Station Pearl Harbor, conducts an emergency surface training exercise 35 miles off the coast of Oahu.
Photo by PH2 David C. Duncan.

Letters

Year 2000 vs. The Millennium

The March issue of *All Hands* contained an article entitled "Y2K," regarding the concerns over computers that can't process the year 2000 properly.

It should be noted that throughout the article, the author made references to the millennium. Although he never expressly said so, the references did insinuate that the new millennium will start Jan. 1, 2000, which is what many Americans do believe. That's not true.

The third millennium A.D. will begin Jan. 1, 2001. The Gregorian calendar had no year 0, it went straight from 1 B.C. to 1 A.D. As such, the first millennium A.D. started in the year 1 A.D. The second (and current) millennium started in the year 1001 A.D., exactly 1000 years after the start of the millennium before it. Therefore, the next millennium will begin in 2001, 1000 years after the start of the second (and current) millennium.

While this may seem like a small point, it is a common misconception that many people have. I believe it's the job of the media – including publications like *All Hands* – to ensure that fallacies like this one are not perpetuated, even inadvertently.

David W. Crenshaw
Virginia Beach, Va.



U.S. Navy photo

USS Carter Hall (LSD 50)

Environmental Hall of Fame

As an environmental enthusiast and a proponent for the Navy's environmental preservation protection programs, I read your [April] issue of *All Hands* with bittersweet emotions. I was thoroughly impressed with your magazine's 47-page layout, which encompassed everything from marine life to ocean demographics. Clearly, a great deal of research, time, effort, planning and creativity had been funneled into this edition of the "magazine of the U.S. Navy."

I found your Earth Day insert to be lacking in the scope of research that you had so obviously devoted to the rest of the magazine. Highlighted in the center-fold is an unidentifiable Aegis-class cruiser, the example of the platform whose goal it is to protect the oceans, the Navy's "most prized resource for training and readiness."

USS Carter Hall (LSD 50) is the CNO's and SECNAV's Environmental Award recipient for FY97. As commanding officer, I make it my personal responsibility to ensure that every facet of every shipboard program which has potential environmental

repercussions is taken seriously and groomed meticulously. Environmental awareness is a main focus in *Carter Hall* and we have been recognized for our attention to detail in this area of concern. I was chagrined to see the omission of those U.S. naval commands recognized for their environmental excellence; a list that was promulgated by SECNAV in mid-March.

I would hope that, in the future, commands like USS Carter Hall will be recognized as those responsible for maintaining the standard of excellence for the Navy. These commands deserve tangible recognition for their hard work and dedication – work and dedication that starts at the deckplate level.

S.V. DeGeus
Commanding Officer
USS Carter Hall (LSD 50)

Tell us something we don't know.

Send your comments to: *All Hands*, Naval Media Center, Bldg. 168,
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or e-mail: allhands@mediacen.navy.mil



Around the Fleet



Photo by JOC(SW) Jim DeAngio

CTT1(SS) William Kepner receives a video e-mail from his 5-year-old daughter, Carissa. It's only fair since he sends her one almost every evening.

Generation Next

Video e-mail is here! And it is creating quite a stir among the Sailors and Marines deployed to the Western Pacific with USS *Tarawa's* (LHA 1) Amphibious Ready Group.

"We have sent nearly 400 video e-mails since installation was completed six weeks ago," said Religious Program Specialist 1st Class Michael Lines, who supervises the program in the ship's library. "We get nothing but positive feedback. Once they send one, they think it's great. It's a real morale booster!"

Test platforms, *Tarawa*, USS *Mount Vernon* (LSD 39) and USS *Denver* (LPD 9) are taking communications into the 21st century. By adding a small camera and some additional software to a desktop personal computer, Sailors can now send shorts videos –

continued on page 8

Brand New BEQs

In seeking new ways to improve its junior Sailors' quality of life, the Navy has taken a huge step in the right direction.

It is currently building new barracks and renovating existing buildings in an effort to provide private rooms for all its junior enlisted Sailors. The program, called the *1+1 Standard*, is seeking to provide everyone in pay grades E-1 to E-4 with a shared, two-room suite, complete with private bedrooms and kitchenettes.

Naval Technical Training Center Corry Station in Pensacola, Fla., a joint-service training base with a large contingent of students and staff from the Navy and other services, opened the first *1+1* renovated barracks. The Navy is currently building *1+1* barracks in Port Hueneme, Calif., Annapolis, Md., Corpus Christi,

Texas, Portsmouth and Williamsburg, Va., Guam and Sigonella, Sicily.

Before their facelift, the Corry Station BEQs housed residents in "rack and stack" with four-to-a room berthing – and sometimes more.

"The buildings have taken on a new personality," said Theresa Withee, the Corry Station bachelor housing director. "They have new sloping metal-seam roofs and individual heating and air conditioning units, and the residents especially enjoy the kitchen because it makes the shared living quarters more like home."

"I certainly didn't think the new barracks would be anything like this," said Seaman Michael Richardson, assigned to the Ceremonial Guard, Naval Station Washington, D.C., who lives in a modified version of the *1+1* plan. "This exceeded my expectations."

According to LCDR Jennifer Flather, public affairs officer for the Washington Annex, "We wanted to provide a campus-like atmosphere in addition to the state-of-the-art furniture and fixtures."

The modified version offers a microwave oven, matching furniture and accessories, pullout computer desks, a washer and dryer and a small shared living-room area. There's also an electro-magnetic key lock which can monitor comings and goings. "We even put in picture rails so

these guys won't need to drill nails in our walls," Flather said.

"I think on the whole this is great," said SN Victor Mace, also assigned to the Ceremonial Guard in Washington. "It offers us a lot of privacy – kind of like you're at home. This is better than any barracks I've ever seen."

Story by Patricia Oladeinde, staff writer for All Hands.

Units feature shared kitchen and bath areas (top) and private sleeping rooms.



Respiratory Research

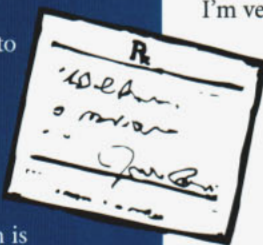
Navy research has perhaps discovered another tool to combat acute respiratory diseases – azithromycin. The Naval Health Research Center (NHRC), Navy Environmental and Preventive Medicine (Unit 5) and Naval Hospital Camp Pendleton, Calif., are currently conducting a study of the drug's effects on more than 1,000 Marine trainees at the Infantry Training School at Camp Pendleton.

CAPT (Dr.) Gregory C. Gray, a researcher at NHRC, said the antibiotic, which has been approved for use by the Federal Drug Administration, may be useful in combating the outbreak of streptococcal infections among recruits and other military populations.

"Because it prevents more types of infections," explained Gray, "it may be a better choice to combat bacterial respiratory epidemics of unknown cause."

The benefit of using azithromycin is that it protects against more bacterial pathogens, which is necessary in large, high-risk populations. For Sailors and Marines, the new regimen is much more attractive because azithromycin is taken orally rather than by injection.

Story by Kimberly Allen Rawlings, public affairs office, Bureau of Medicine and Surgery.



with near real-time audio – to the folks back home or to anyone, anywhere in the world. The video is sent as an attachment to a traditional e-mail, much like a picture or .WAV (sound) file. Once received, it can be downloaded and played, deleted or saved for future viewing.

"It is a fantastic way to keep in touch with your family," beamed Cryptologic Technician (Technical/Submarine) 1st Class William Kepner, of Munich, Germany. "I tell everybody I work with to try it. I'm there almost every night. I use it to keep in touch with my daughter."

And his daughter uses it to keep in touch with him.

Using the newly-installed system at headquarters, Commander, Amphibious Group 3, 5-year-old Carissa can send videos to daddy on board *Tarawa*.

"She loves the videos," said Kepner's wife Susan via e-mail. "Carissa loves being able to see, hear and talk to her dad. She plays the videos over and over and answers him if he asks a question. I'm very thankful for this technology. He is on the other side of the world, but we can see and hear him, and it makes him seem closer."

What's next, e-mail care packages?

"I think we'll soon be able to telephone home through the Internet," said Lines. "A Sailor is going to be able to get on there and be able to see and chat with his wife. It'll be like *Star Trek*. It's coming, I'm sure."

Story by JOC (SW) Jim DeAngio, public affairs officer, USS *Tarawa* (LHA 1).

Infrared Eye

The 1989 *Exxon Valdez* oil spill in Alaska dramatically illustrated how damaging and expensive oil spills can be – wildlife was stained black with oil and one of the world's most picturesque locations

was forever tainted. Millions upon millions of dollars have been spent to repair the damage and it will

be years before the ecosystem is as it was before the accident.

Primary to the successful containment of an oil spill is quick, effective identification

and cleanup. The Navy recently developed new technology to reduce the possibility of – and potential damage from – oil spills during harbor operations.

It's called the Infrared Camera Leak Detector and it uses infrared technology to locate and categorize oil spills in harbor waters. The camera works by highlighting the oil's heat signature, allowing Navy personnel to easily track, contain and clean up spilled fuel. The camera's digital images can be stored on a removable disk and downloaded to a computer for further analysis.

"The infrared camera has become a major player in our spill prevention program," said Daniel Nichols, Natural Resource Management Spill Team Leader at NAS Joint Reserve Base New Orleans. "We are very excited about this new technology."

Major spills occur most often during refueling operations and can cost as much as \$100,000 per spill to clean up. These costs are expected to decline by about 25 percent due to the camera's ability to provide early detection – allowing the spill to be attacked before it can spread.

Other uses for the Infrared Camera Leak Detector are also being evaluated, such as inspecting double-walled storage tanks for leaks and verifying hazardous waste storage tank level and temperature.

This new camera system will help to reduce costs, streamline procedures, and create a safer, healthier work environment for Navy personnel.

Story and photo by Anthony Vendetti, Naval Air Warfare Center, Aircraft Division, Lakehurst, N.J., and Dan Glass, N45.



Letternet

While on deployment, Sailors and Marines have long waited with anxious anticipation for the "thump-thump-thump" of a helicopter setting down on the aft end of their ship. They knew that helo was carrying the mail and perhaps a letter from their sweethearts or a care package full of treats.

But USS *Mount Vernon's* (LSD 39) current deployment is different. The crew is using the Internet to keep in touch with family and friends stateside.

"Night and day," is the description used by Electrician's Mate 1st Class Paul A. Rochau when he talks about the difference between conventional mail and the Internet. "You have more rapid communication with your spouse and family. I can stay current with events back home, instead of waiting for three or four weeks to get a letter."

Even the traditional "care package" has not escaped

Mount Vernon's cyber-revolution. Rochau, from Kenosha, Wis., joked about his ability to order care packages. "It cuts turn-around time by months," he said.

Other crewmembers agree. "With e-mail, I get at least two messages a day. With conventional mail, I haven't gotten one letter," said Boatswain's Mate 1st Class Timothy J. Broderick, from Philadelphia.

The advantages brought by electronic mail are not limited just to keeping in touch with family and friends. It also is a faster way for crewmembers to keep track of their personal affairs while deployed.

"Let's say you have to make sure a payment is made," said Interior Communications' (Electrical) Mate 2nd Class David A. Shaffer, from Savannah, Ga. "With e-mail you can be sure a payment is made in a timely manner so it won't affect your credit."

There are still some Sailors, like Boatswain's Mate 1st Class Charles S. Foley, from Colorado

Springs, Colo., who stand by the conventional system of sending and receiving mail.

"Electronic mail is not a substitute for hand-written mail by your loved ones," he said.

Though there are some who sympathize with Foley's feelings, one great benefit of e-mail as observed by Boatswain's Mate Chief Michael J. Santos, a Guam native, is the positive effect on the morale of his Sailors.

"E-mail has been a tremendous boost to the morale of the crew," Santos said.

Mount Vernon's deployment to the Arabian Gulf is not just taking her to foreign ports and international waters — she's sailing straight into the 21st century.

Story by LTJG Koma B. Gandy and ENS Michael T. Ennor, USS *Mount Vernon* (LSD 39).



Postcard From the Fleet

H O T L I N K

For more information on the Infrared Camera Leak Detector or about successful pollution prevention technologies conducted under the Pollution Prevention Equipment Program (PPEP), visit www.lakehurst.navy.mil/p2/index.htm

Name: Mess Management Specialist 2nd Class (DV) Charles L. Bloom

Command: Shore Intermediate Maintenance Activity, Norfolk

Hometown: Cheboygan, Mich.

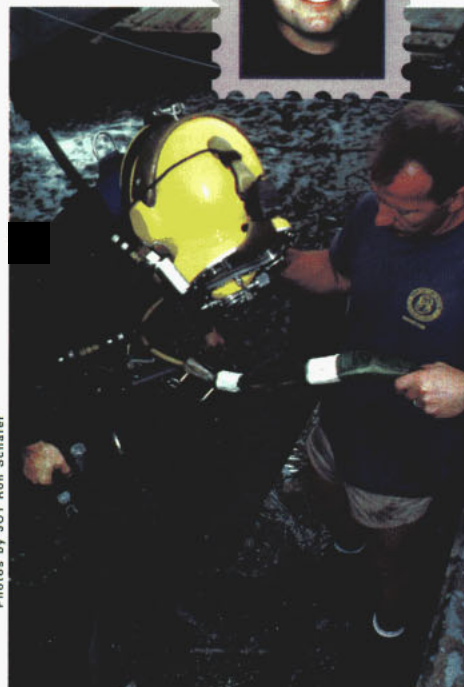
Hobbies: Landscaping

Favorite Duty Station: SIMA Norfolk

Favorite Quote: "The only easy day was yesterday."

Keys to success: "Sticking to it. Putting forth your best effort."

Goals: Advancement to first class petty officer



Photos by JO1 Ron Schafer

Seminars via Satellite

This past year, the Navy began testing a pilot program aboard USS *George Washington* (CVN 73) and USS *Carl Vinson* (CVN 70) in which 60 stateside instructors interacted with deployed Sailors by using real-time video teleconferencing (VTC).

The video system uses a device called "codec" which encodes and decodes multiple signals instantaneously via satellite. For the first time, students were able to actually see and talk with their professors as the courses were being taught.

The program is still under review and it is unlikely that it will be employed by every ship in the fleet anytime soon. In fact, right now only carriers and command ships have the hardware to make it happen. However, the possibilities are intriguing.

"It brings the campus environment to the ship in real-time and allows the Sailors to become part of the university experience," said ENS Scott Hafley, *Carl Vinson's* educational services officer. "The college students on campus are able to interact with the Sailors — which provides for interesting feedback and a great learning experience for both sides."

Programs like VTC learning for deployed Sailors are vital in this new information age, where getting an education is no longer something nice to do. It is absolutely critical for advancement and quality of life.

Story by USS *Carl Vinson* (CVN 70)
Public Affairs.

Keeping PACE

Taking college courses at sea can be stressful. This isn't a posh, ivy-covered campus in the middle of Massachusetts — this is a haze-gray, missile-launching weapon of global diplomacy somewhere in the middle of the Atlantic Ocean. Between general quarters, fire parties, weapons tests and the myriad of other evolutions Sailors must contend with on a daily basis, when is anyone going to find the time to study? Well, for those who can, the Navy's Program for Afloat College Education (PACE) just got better.

PACE isn't new, but this past year it underwent a major overhaul. In the past, Sailors could only take lower-level courses and earn their associate's degree while deployed or overseas. PACE is now offering every Sailor, on every ship — and in several, isolated, overseas sites — the chance to earn not only a bachelor's degree but graduate credits as well.

"This is certainly a dream come true for those Sailors who don't have the money, time or opportunity to complete their advanced degree in a regular setting," said Dr. Frances Kelly, director of Navy Voluntary Education Programs, Navy Annex, Arlington, Va.

"The greatest thing about the expanded program is that Sailors now can earn a four-year degree in public and business administration as well as in computer science. And they do it at their own speed using CD-ROMs and the Internet," said the Buffalo, N.Y., native. "It's simple. Sailors can just plug in their own computer, put in a disc and go off to some corner and begin class. Having the courses on CD-ROM offers Sailors the flexibility to take them anytime — anywhere they want. More importantly, Sailors don't have to worry about getting 10 or more people in a room to synchronize with instructors back home like they do for the interactive or teleconferencing classes."

Kelly concedes there aren't yet as many courses available on CD-ROM as there are on the interactive video, but she is also confident that it will happen and happen soon.

The Navy is also looking to expand the Internet to Sailors. "Ships that have satellite

capability will get access sooner than the others, but that too will change," said Kelly. "Some colleges, like the University of Phoenix, offer a complete degree program via the Internet. If you combine both of these avenues, there's no reason Sailors can't get a degree."

The computer-based courses aren't the only improvements being made to PACE. Transcripts are also being revamped.

"Transcripts given to Sailors will look exactly like the transcript of everyone actually on campus," said Kelly. "And the exams are now graded by professors at the universities involved."

So instead of curling up with a good book, watching videos or playing computer games, use your off-duty hours to earn credit toward your degree. With the new technology available, it's well within your reach.

Story by Patricia Oladeinde,
staff writer for All Hands.

Commands interested in signing up for the program should review NAVADMIN 151/95. More information is available by calling Frances Kelly at DSN 223-1749 or (703) 693-1749.

Year 2000 Website

The Navy's Y2K project office has launched a new website that can be accessed using either of the following addresses:

<http://www.cnoy2k.navy.mil/ny2k/ny2k.htm> or
<http://199.211.210.88/ny2k>

The site was designed to help project officials manage Navy-wide computer problems and to keep Sailors informed of their progress. The site contains a wide variety of Y2K information, to include: points of contact, compliance checklists, recent news releases and even links to

other military, federal and civilian Y2K resources online. It will also permit authorized users to access the Navy's Y2K reporting database for testing, assessing and certifying computer-related Y2K problems.

With more than 30 percent of the Navy's computer systems

already Y2K compliant, this website will be a valuable asset in helping to upgrade the remaining systems.

For more information, call the Project Office at DSN 329-3050 or (703) 601-3050.

Story by JO2 Jeremy Allen,
All Hands.

Trimming Your Waste

Ships generate a large volume of domestic waste. Taken together, solid waste and sewage can become a threat to the safety and health of the crew if handled improperly.

Navy ships do not have the luxury of being able to deposit their solid waste in landfills, nor can they discharge their sewage to environmentally-sound treatment plants. In fact, Navy ships have very little space and very few personnel they can dedicate to waste processing. Yet, they still must comply with stringent new waste-disposal regulations imposed by the international community. How will they do it? With new capabilities, revolutionary systems and streamlined processes.

The Chief of Naval Operations and Naval Sea Systems Command are developing an integrated waste processing system which will allow ships to circumnavigate the globe without restriction due to environmental wastewater regulations. The concept is to integrate all liquid waste – bilge water and sewage – handling and processing systems into one interconnected system with a centralized waste destruction module (incinerator) aboard all new ships. This will give Navy ships the capability to collect and destroy their own liquid wastes at sea without replenishment ship support. Advanced filtration, combustion and computer technologies are being combined to reduce maintenance, operator attention and waste handling requirements.

For example, the large amount of liquid waste generated daily can be reduced by using advanced filtration technology. Sewage can be separated readily into two components, heavy-solids brine and clear water, by subjecting it to specialized filtration technology known as membrane filtration. The clear water fraction is clean enough to be discharged overboard. The onboard centralized waste destruction module can process the remaining waste, heavy-solids brine.

Navy researchers are also experimenting with new thermal combustion technologies.

Computer simulations and dynamic combustion models are being used to develop a compact and environmentally-sound thermal destruction module. This module will destroy the waste streams generated by the bilge water and sewage membrane treatment units. A computer-based controller will be used to direct and monitor all processes, and report status and casualty information to the ship's damage-control station.

Prototype systems have been tested with great success aboard USS *L.Y. Spear* (AS 36) and USS *Carney* (DDG 64). As a result, new ships are being designed with these new waste-disposal capabilities beginning with the *Arleigh Burke*-class destroyer USS *McFaul* (DDG 74).

Story by N45 Public Affairs

Benefits of integrated liquid waste processing aboard ship

1. Sailors have less interaction with shipboard waste.
2. Separate liquid waste control systems will be reduced to one centralized controller.
3. Ships will not have to adjust their operations to discharge or offload liquid wastes in certain areas.
4. Ships will depend less on shore facilities and may be able to visit ports lacking waste disposal facilities.
5. The high cost of bilge water, sewage and gray water disposal abroad will be reduced.
6. The environmental impact of fleet operations will be reduced by cutting down on the overboard discharge of bilge water, sewage and gray water.

Brute Strength

Chief Engineman (SW/CC) Arthur Green recently broke the national deadlift record during an Amateur Athletic Union (AAU) competition held in Waimanalo, Hawaii.

Green, assigned to Naval Station Pearl Harbor, lifted 606 pounds while competing in the 242-pound, sub-masters class.

Waimanalo was Green's first competition as a power lifter. This summer he will compete in the RAW Nationals in Irvine, Calif.

"RAW means without supportive equipment other than a belt," Green explained. "In a lot of other competitions, you are allowed to wear supportive equipment such as bench shirts. This equipment allows you to be able to lift more weight. RAW is all brute strength."

Green has been building strength for 12 years, ever since he was put on the Navy's weight control program. "I owe all of this to the Navy. Being put on [weight control] was the best

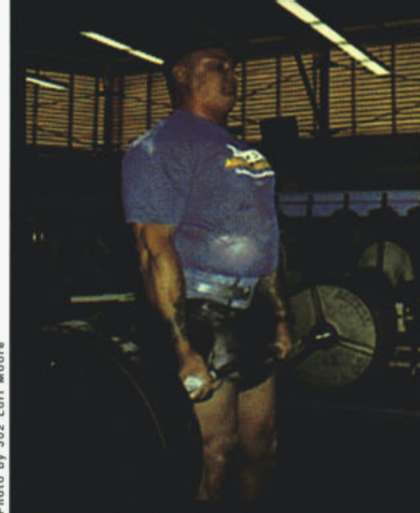


Photo by JO2 Lori Moore

ENC(SW/CC) Arthur Green lifts 606 pounds to break the national deadlift record.

thing that could have happened to me," Green said. "If my command had not adhered to Navy policy, who knows where I would be today. I just hope this story will help inspire or motivate someone to switch to fitness and be a winner. It takes patience, good nutrition and hard work. If you want it bad enough, it can be done!"

Story by JO2 Lori Moore, public affairs office, Naval Station Pearl Harbor.

lodge is one block from the Atlantic Ocean.

The 50-room Navy Lodge offers rooms with queen-sized beds and two double beds. There are also business suites and handicapped rooms available. All rooms have fully equipped kitchenettes with microwave ovens, coffee makers and toasters.

The new lodge offers many special amenities including color TV/cable/video cassette players, hair dryers, cribs, video tape rentals, laundry facilities and a children's play area.

The lake is stocked and ready for fishing and the front

Navy Hospitality

The first Navy Lodge to be built with cedar-shingle siding recently opened in Dam Neck, Va. Sitting on the bank of Red Wing Lake, the two-story

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Around the Fleet

continued from page 11
desk can help with obtaining a fishing license.

Navy Lodge reservations are accepted up to 60 days in advance for active-duty personnel in a leave status and anytime for active-duty on permanent change of station (PCS) orders. Retired personnel, reservists, DOD personnel and official guests of the command can make reservations up to 30 days in advance.

Reservations are held until 6 p.m., unless guaranteed with a credit card. Registered guests cannot be bumped to accommodate other guests.

To make a reservation or to get a copy of the Navy Lodge worldwide directory, call 1-800-NAVY-INN.

Story by Navy Exchange Command Public Affairs.

Touch-down

While skydiving one day in 1974, Angus H. Rupert came to the realization that the human body can collect a tremendous amount of information through the skin. Because Rupert also flew planes — when he wasn't jumping out of them — he was immediately taken by the idea of creating a system of non-verbal communication in the field of aviation — a system that could somehow transmit information to pilots by exploiting their sense of touch.

But it wasn't until 10 years later, when he reported to the Naval Aerospace Medical Research Center in Pensacola, Fla., that his idea began to take shape — that shape is now known as the Tactile Situational Awareness System (TSAS).

TSAS consists of a matrix of

Video-healing

Imagine leaving work to visit a doctor 180 miles away and returning an hour-and-a-half later.

Not possible?

It was made possible for Steel Worker 2nd Class Travis Schellpeper of the 31st Naval Construction Regiment at Naval Construction Battalion Center, Port Hueneme, Calif., by a managed care telemedicine demonstration program sponsored by the Office of the Lead Agent, TRICARE Southern California.

Schellpeper was suffering from an inner-ear injury that his primary care doctor, LT (Dr.) Chris Graves, was unable to diagnose. Graves referred Schellpeper to CAPT (Dr.) Darrell Hunsaker, an ear, nose and throat (ENT) specialist at



Naval Medical Center San Diego.

But Schellpeper never left Port Hueneme. He visited Hunsaker via computer and received the same quality care as if he had made the 360-mile round trip.

According to Lt. Col. Alton Powell, III, USAF, a flight surgeon who coordinates the telemedicine program, "We're going to change the way health care is delivered in DOD. And we're going to do it by applying off-the-shelf, state-of-the-market technology to proven medical processes at a substantial savings



HM3 John Mulroy uses an otoscope to probe SW2 Travis Schellpeper's ear in Port Hueneme ... while CAPT (Dr.) Darrell Hunsaker examines the inside of his ear via computer in San Diego.

tactors (small sensors) fitted into an existing piece of apparel, such as a pilot's cooling vest. The tactors emit a series of stimuli based on information gathered by a small, portable computer from aircraft sensors monitoring attitude, velocity, altitude, etc. This data is converted, through a series of algorithms, into information that is presented as a series of vibrations and electrical impulses, to the wearer.

For example, in reacting to the pitch and roll of an aircraft, the tactors apply stimuli to different parts of the wearer's torso as a continuous reminder of which direction is "down." Because of the multitude of conditions in which pilots are required to fly, disorientation can be a common hazard, making the need for TSAS obvious.

"The key to the system is that this information is very intuitive," explained Rupert. "The pilot does not have to think about what they are doing by looking at a visual instrument, they can react to what they feel."

As Rupert was developing TSAS, he discovered that the system had applications beyond the aviation community. Navy divers, SEAL teams, and Explosive Ordnance Disposal (EOD) teams can also benefit from the awareness TSAS provides.

"One of the principal advantages of the system is that it provides a form of non-verbal communication between the user and a stationary position," said Rupert. "It's clandestine. It combines safety and improves the performance of personnel. For instance,

divers can use it to give navigation information — left, right, up, down — which increases war-fighting capability."

Although it has yet to be attempted, Rupert said the capability exists for the system to be set up for two-way communication.

Fleet use is still years away — the system is still in research and development. But, Rupert has little doubt of the system's potential for success.

"It creates an intuitive man/machine interface that will reduce operator workload and provide situational awareness in a more efficient way."

Story by JO1 Ron Schafer, a Norfolk-based photojournalist assigned to All Hands.

to the government and our beneficiaries in terms of dollars and [time]."

"Our program is based on a managed-care paradigm," continued Powell. "The basis of managed care is providing medical treatment by the right provider at the right time. Telemedicine [uses] technology to deliver the right care at the right time."

The TRICARE telemedicine program will eventually apply to several different specialties. But for now the program is focusing only on ENT referrals in order to collect data that will serve to illustrate the true cost and time savings to patients and the government. Based on data collected so far, Powell estimates that by the end of the nine-month experimental period, the program will have saved, on average, \$240 in travel costs and 14 hours in travel and processing time per patient. The communication cost for a

telemedicine visit is \$20.

"This technology is as good as being there in person when it comes to making clinical decisions," said Hunsaker.

"The biggest benefit of the program is the patient satisfaction," said Graves. "They feel like they've gotten as good, if not better, care without having to drive."

Patients involved with the program were enthusiastic about the possibilities. "I saw no difference in quality," said one, "except that I was assured my problem was genuinely considered by multiple specialists. This made me feel good. The Navy needs to expand this concept."

"It's an outstanding program," agreed Schellpeper. "It saved me a trip to San Diego and at least a full day of work."

Story and photos provided by LT Rick Haupt, public affairs officer, TRICARE Region 9, San Diego.



Holographic Hornets

Boeing recently installed the first Carrier-based Weapons System Trainer (CV-WST) on board USS *Independence* (CV 62) to help pilots from Carrier Air Wing 5 (CVW-5) practice flying the F/A-18 in a variety of scenarios. The simulator has only been in use since January and is already a big hit.

"The best benefit is maintaining and sustaining aircrew readiness," said LCDR Bryan Kust, operations officer for CVW-5, who has flown the simulator twice. "Particularly in simulating high-threat environments and fourth generation fighters. The visual presentation is very realistic."

The CV-WST is used for Naval Air Training and Operating Procedures Standardization (NATOPS) checks, normal emergency procedures and other flight ops. It also simulates weather conditions and enemy threats.

Although the simulator is primarily for pilots, it can be used by a variety of aviation rates. Aircraft mechanics can simulate engine fires and other contingency situations.

In the past, "training was held on static displays," said Kust. "Now, mechanics can get more of an interactive type training."

Crash and salvage personnel are currently looking for ways to use the CV-WST as well.

Story by JO2 Henry W. Rice, public affairs office, USS Independence (CV 62).



Photos by PHAN Chris Howell

(top) The flight simulator allows pilots like LCDR Bryan Kust from Pennington, N.J., more time to train even though he's forward deployed to the Arabian Gulf in support of Operation Southern Watch.

(bottom) Kust gets ready to begin a training session in an F/A-18 Hornet flight simulator aboard USS Independence (CV 62).

Emerging

FROM THE

By Jeffrey L. Benson

What's your image of a mast? A long pole rising from the deck of a cutter with sails unfurled? A tall, slender, vertical structure covered from top to bottom with flags, yardarms, ladders, radar antennas and communications equipment? Well, it doesn't matter. Because the Advanced Enclosed Mast and Sensor (AEM/S) System is unlike any other mast you've ever seen. In fact, it doesn't look like a mast at all.

The AEM/S System, a bi-pyramidal, hexagonal structure made of an advanced, hybrid-composite material, looks like something straight out of science fiction. All antennas and equipment are enclosed, some are even embedded in the structure itself, giving it a smooth, sleek, 21st century look.

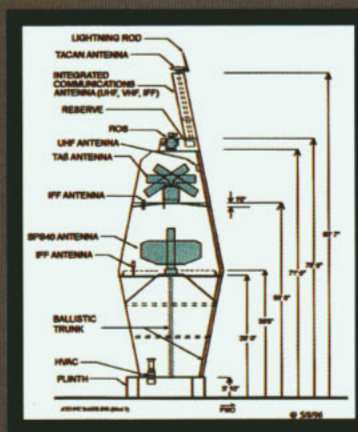
The mast was designed and built by an Integrated Process Team, known as the "MASTers," made up of technical experts from Navy activities and private industry nationwide.

Last year, the AEM/S System was installed aboard the *Spruance*-class destroyer USS *Arthur W. Radford* (DD 968), replacing her conventional main mast and beginning the demonstration phase of the Advanced Technology Demonstration (ATD) for the AEM/S System.

Radford's Sailors will provide the MASTers – and the fleet – with crucial feedback on the system's warfighting capabilities.



■ The shadow of the old mast falls on the new Advanced Enclosed Mast/Sensor System on USS *Radford* (DD 968). Its prime directive is, "Nobody gets hurt."



Concept Description:

■ Large Composite Structure holds lighting rod, TACAN antenna, integrated communications (UHF, VHF, IFF) antenna, IFF Antenna, SPS40 Antenna.

■ Advanced trunk composite exterior is made up of a five-layer sandwich of PVC foam and circuit boards that provide structural integrity while allowing radarwaves to pass through.

O F T H E P A S T

A revolutionary concept in mast design, the new AEM/S System will greatly enhance the surface fleet's tactical capabilities. By allowing a clearer view of the horizon, the system will eliminate false targets associated with metallic mast protrusions and solve interference problems that often affect the performance of conventional ship sensors and radar. This will allow warfighters to engage threats earlier – and with greater accuracy. In fact, *Radford's* Sailors anticipate significant improvements in her surface-to-air missile system effectiveness.

Because it is an enclosed structure composed of advanced-composite, specially-coated materials, the AEM/S System will significantly reduce the ship's radar signature, while protecting radar and communication equipment from the weather – greatly reducing repair frequency, maintenance costs and risk of failure.

And enhancing crew safety.

"You don't have to worry about wind or weather. You can do maintenance anytime," said Electronics Technician 2nd Class Ronald Stewart, supervisor of the radar maintenance on board *Radford*. "Because you're standing on a solid deck, you will be better able to concentrate. You will be safe and able to do your job more efficiently."

Radford's crew continues to sail beneath the shadow of this radically restructured mast, evaluating and testing the system and its impact on such things as maintenance, ship handling and helo operations. "We tried our best to shake it off and we couldn't," said CDR Kurt W. Tidd, the ship's commanding officer. "It's going to stay there forever."

Benson is a manager of the AEM/S System ATD, Naval Surface Warfare Center, Carderock Division.



U.S. Navy photo

■ USS *Radford* (DD 968) and the new Advanced Enclosed Mast/Sensor System.

■ ET1 Pat Jensen and ET1 Ron Stewart perform PMS on the SPS-40 antenna loft inside the mast, 45 feet above the 03 deck, without regard to wind, sun or rain.



Photo by Jeffrey A. Benson



Fi

By JO1 Ron Schafer

restarter

A Navy ship can be a dangerous place. When a fire breaks out on board ship, there is nowhere to run — nowhere to hide. The choice: put out the fire or burn. Sailors spend hours upon hours training for that day, hoping it will never come — running drill after drill after drill.

But drills aren't anything like the real thing. Sailors, particularly those aboard aircraft carriers, rarely have the opportunity to train for fire-fighting evolutions against the real enemy. Because hydrocarbon fuels are environmentally unsound and expensive, Sailors are forced to simulate fire aboard ship — but maybe not for much longer.

Meet MAFFTD, or the Mobile Aircraft Fire Fighting Training Device. After years of frustrating attempts to develop a way to train firefighters at sea, officials at Commander, Naval Air Force U.S. Atlantic Fleet (COMNAVAIRLANT) saw

the potential for a portable, reusable system that could be used on the deck of an aircraft carrier or at shore installations to provide realistic scenarios for training. Late last year, they found one – MAFFTD.

MAFFTD burns propane, a clean-burning fuel that meets all EPA criteria, and requires no containment area. Those features also make it far less expensive to operate and maintain.

“We found that with this system we can have an unlimited number of scenarios,” said Clarence A. Rout, Fire Marshall, Naval Facilities Engineering Command (Atlantic Division). “With the old system, we just dumped fuel out on the ground and lit it off. It made one big fire and we put it out.”

“MAFFTD gives you more realistic training because you can have engine fires, smoked-up cockpits, cargo fires, fires on both sides of the fuselage, whatever you want. Or you can just smoke the unit up – which gives you the oppor-

A fire fighter pulls a hose into the Portable Aircraft Fire Trainer during training at Naval Station Mayport, Fla. The unit is part of the Aircraft Fire Fighting Unit from Norfolk.



tunity to train on the self-contained breathing apparatus (SCBA).”

MAFFTD can be configured to resemble different types of aircraft. Putting it on board ship gives fire fighters the opportunity to use their own gear, in their own environment, facing actual flames. The realism it creates is invaluable.

“They’re going to be ready,” said Bud Williams, Training Chief, Naval Station Norfolk Fire Department. “We saw it last year when we went on the ship. You could see it in their faces. They know how their equipment works. They have confidence in themselves. They’re not at another place using somebody else’s equipment.”

Last year, a similar unit was used for a crash and salvage training competition between Norfolk-based ships including USS *Dwight D. Eisenhower* (CVN 69) and USS *John C. Stennis* (CVN 74). The response from firefighters who participated was overwhelming.

“It’s state-of-the-art,” said Aviation Boatswain’s Mate (Aircraft Handling) 3rd Class Henry B. Burns, stationed aboard *Ike*. “You have actual fire-fighting situations inside the aircraft. It gives you a look at what you would really see if something happened out at sea. You actually got to get into the aircraft and fight the fire while you were inside.”

Continued on page 20





The Portable Aircraft Fire Trainer at Naval Station Mayport, Fla. The unit is a burnable, reusable mock-up of an aircraft.

Photo by PH1 Brian Montgomery



Photo by PH1 Brian Montgomery

USS *McInerney* (FFG 8) Engineering Duty Officer, CWO2 Ferguson of Blackville, S.C., plots information given to him by phone talker FC1 Deegan of Barberton, Ohio.

Quick Fix

Sometimes the most difficult problem can have the simplest of solutions. That was certainly true for Electronics Technician 2nd Class Michael Cigala of USS *Carl Vinson* (CVN 70). Cigala needed just five minutes to solve a problem that had been dogging air traffic controllers for years.



Photo by PHAN Inake Farabee

ET2 Michael Cigala "rigs" another gas mask for use in *Carl Vinson's* air traffic control center. It took Cigala just five minutes to find a way to integrate a boom-type microphone with the standard MCU2P gas mask used in the ship's CBR drills.

"There are no designs for gas masks to be used with our boom headsets," said Air Traffic Controller 1st Class Thomas Schrock. "The controller has to literally yell through the mask to talk to the aircraft, while holding the boom up to the mask, and hope the pilot can understand."

Data Systems Technician Senior Chief (SW) Nicholas Potter, leading chief for *Carl Vinson's* combat systems, first recognized the seriousness of the situation during a general quarters drill.

"I was walking around while we were at MOPP (Mission-oriented Protective Posture) Level 4 and everyone had a gas mask on," Potter said. "But in air traffic control some Sailors weren't wearing their masks. I asked 'Why?' and they explained that they were talking to aircraft on live circuits and that they just couldn't do it safely with their masks on."

MOPP 4 is the highest state of readiness for chemical, biological or radiological warfare and requires all hands to take protective measures. These measures include the wearing of gas masks. For the air traffic controllers, the choice is not easy: personal safety or taking care of aircrews.

"It's a deadly situation," said Air Traffic Controller 1st Class (AW) Jesse Box.

The problem needed a solution. So

Potter challenged Cigala to find one. After analyzing the situation for a little more than five minutes, Cigala came up with the answer. He opened up the handset portion of the headset device and soldered the microphone audio wire ends, then ran them to the front of the gas mask. With a borrowed microphone installed in the mask, the new system was ready to be "op tested." It was as simple as that.

"It was neat when Cigala brought the first prototype over," said Schrock. "This thing looked prehistoric but it worked."

"With the new modification, air traffic controllers will be able to speak normally to aircraft in the air," said Air Traffic Controller Chief (AW) Bob Kaetterhenry. "The wire jack is real handy. We don't have to change headsets in the process of putting on the mask."

Cigala received \$2,500 for the innovation as part of the Navy's Beneficial Suggestion Program. After the idea moves through the chain-of-command, field change instructions could be issued to the fleet, giving Cigala's invention legs that could take it around the fleet.

Story by USS *Carl Vinson* (CVN 70) Public Affairs.

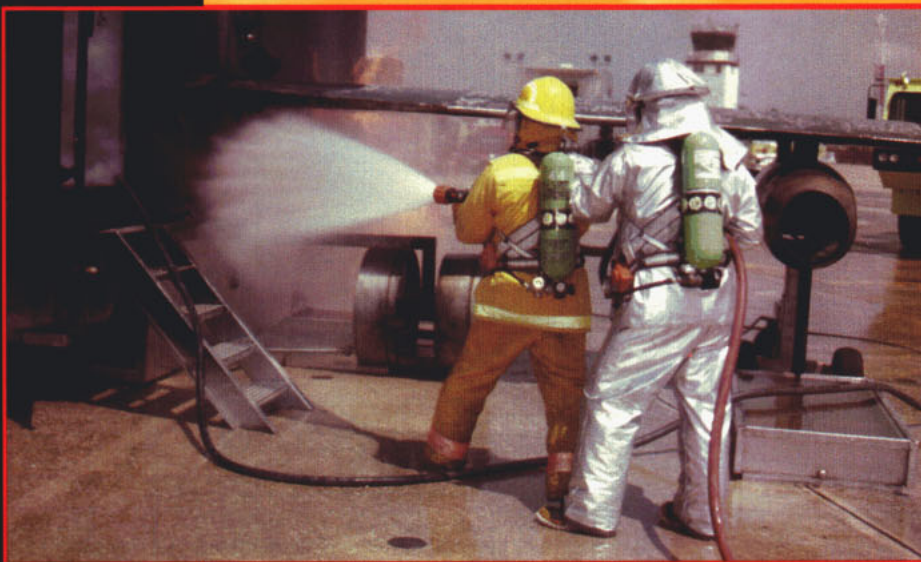


Photo by PFI Brian Montgomery

Sailors battle a fire started by MAFFTD.

Continued from page 18

"Having hands-on experience with actual fire just doesn't compare to what we used to do," explained Aviation Boatswain's Mate (Aircraft Handling) 3rd Class David W. Musgrave, also stationed aboard *Ike*. "Most of the time, crews never really see a fire. They train with an invisible fire. The difference between using a hose that's not filled with water and nothing going on around you and having this thing that's on fire – it's hot, you've got a 250-pound hose you're spraying water with – it lets you see every aspect of the fire around you. It makes a big difference. You'll never know the danger unless you actually see it."

The Right Stuff

Prevention is the key to successful fire management. But when fires do occur, quick and decisive action is required – and so is the right stuff.

Aqueous Film Forming Foam (AFFF) is one of the most effective fire-fighting agents, but its use is often restricted due to environmental concerns. That's because when AFFF is used, thousands of gallons of wastewater are generated. So how do you test equipment and run drills without using AFFF? By using the No-Foam Kit.

The kit uses a biodegradable and environmentally benign water-based dye solution – instead of AFFF – during drills. This solution responds just like AFFF so firefighters can test the fire truck's delivery system. But, costly AFFF wastewater is eliminated.

The No-Foam Kit is installed in the truck's interior piping. From the cab a fire-fighter presses a button to activate the kit and continues with the normal discharge procedure. Using a flow sensor installed in the truck's piping, the firefighter can determine the truck's AFFF delivery system performance. If a "real" fire alarm goes off during a test, the firefighter simply deactivates the kit and the truck is ready to respond with AFFF.

Depending on the vehicle, the kit reduces AFFF wastewater generation by 500 to 1,500 gallons for a five-second test. Navywide, this equates to more than \$10 million in annual savings or an estimated \$1 million per installation. The kit costs about \$7,500, including parts and installation – it will pay for itself in less than two weeks.

Rout added that fire fighters are not the only ones who will benefit from having MAFFTD on board. The entire damage control team will be able to get involved.

"It gives ships the opportunity to bring up their repair parties and actually give them something to work with," said Rout. "So, it involves others on the ship to where they can really run an exercise and not just simulate everything."

The current plan calls for the Navy to purchase at least 12 MAFFTD units and to disperse them regionally in order to provide access to as many units as possible. The first MAFFTD should be available to Norfolk-area ships as early as this fall. According to Williams, the fleet will welcome the opportunity to train using MAFFTD.

"The realism is the biggest thing. To quote one fire-fighter I talked to, 'We like this because we're not just out there spraying water on an open field or on a 55-gallon drum. We get to actually fight the demon.' Anytime you can take a fire fighter and let him fight fire, he's happy."

Schafer is a Norfolk-based photojournalist assigned to All Hands.

The Naval Facilities Engineering Service Center developed the No-Foam Kit, which has been endorsed by the Navy Fire Marshal. Naval Facilities Engineering Command plans to convert all crash fire rescue trucks to this dye-water system. The AFFF dye kit will also be integrated into the next generation of shipboard crash/fire rescue systems and retro-fitted to existing systems. The kit is available through the U.S. Air Force Manufactured Equipment Evaluation program and can be used throughout DOD and in the private sector.

Information provided by N45 Public Affairs.

For more information on the No Foam Kit visit www.nfesc.navy.mil/enviro/ps.

Gearing UP



Photo by PHAN Aaron Leback

Three things are needed to fight a fire: confidence, experience and the proper equipment. Sailors train endlessly building the first two elements of this vital combination, but there is an organization within the Navy that is working just as hard to provide those firefighters with the final component – the tools they need to survive.

Established in 1987, CINCLANTFLT's Non-developmental Items Facility (NDI) plays a critical role in providing Navy ships and Sailors with the best damage control, firefighting and safety equipment on the market today. Sponsored by the Secretary of the Navy's Office of Safety and Survivability, they act as a liaison between the fleet and civilian industry, acting on initiatives to improve safety.

"A lot of our input comes directly from the fleet," explained Master Chief Damage Controlman (SW) Lloyd L. Broughton, director of the facility. The Navy holds a damage control and fire-fighting conference every year where problems are discussed and solutions reached. "We talk to Sailors. That's how we know what's going on out there," said Broughton. "We will also talk to vendors about new equipment and attend trade shows."

NDI was developed so the Navy could stop re-inventing the wheel, so to speak. Rather than incur the expense of developing

A member of the fire team aboard USS *Harry S. Truman* (CVN 75). *Truman*, which was commissioned July 25, is the first ship to be outfitted solely with the Self-Contained Breathing Apparatus rather than the Oxygen Breathing Apparatus.

a new piece of equipment, NDI will adapt an already existing product from the civilian sector.

For example, NDI will purchase a piece of gear and conduct a pre-assessment of the item. If the equipment meets their specifications, they will send it to a Navy platform (ship or station) for a quality assessment.

"We will never make a decision, at this level, to put something out in the fleet," said Broughton. "The fleet will say 'we like it' or 'we don't.' If they say they don't like it, that's the end of the story."

NDI will then provide the manufacturer with both the positive and negative feedback it receives from the fleet. The manufacturer can then improve the existing product or come up with a new one.

Getting a chance to work with new equipment is something that excites sailors aboard the Navy's newest amphibious warship, USS *Bataan* (LHD 5).

"It gives us an opportunity to get our hands on the newest gear that's out there," said Hull Technician 2nd Class (SW) Christopher S. Thompson. "We can get rid of some of the old, antiquated gear we have. It increases morale – when you get new equipment, people are excited to do their job, especially when they know they have the latest and greatest that's on the market."

NDI has evaluated hundreds of products over the past ten years from flash gloves and fire-fighting helmets to the RAM Fan 2000 and the Self-Contained Breathing Apparatus (SCBA). The best part of the program, according to Broughton, is that Sailors get to assess the gear.

The bottom line: NDI promotes readiness and quality of life for Navy Sailors. "If you're not having accidents, you're not losing the materials or the people," said Fred Crowson, technical director for the Secretary of the Navy's Office of Safety and Survivability. "You're better equipped to deal with any situation. It's also a quality-of-life issue. If you can do the job easier and better out there, it makes it easier for the Sailor to come to that ship every day."

Schafer is a Norfolk-based photojournalist assigned to All Hands.

Integrated Inge



nunity

The creation of a new aircraft can be a slow and agonizingly tedious process. Once the initial requirements are established, a series of contractors will propose designs to meet those requirements and the bartering will begin – each one promising to do it better, faster and cheaper. This usually involves fly-offs and competitions, as each contractor tries to sell the Navy on its design.

When the Navy is confident that it has found the company or companies that will build all or part of the final aircraft (one contractor may build the airframe while another designs the interior electronic equipment), more details are provided and the aircraft goes into production.

Once a prototype has been developed, the contractor(s) will test the avionics, airframe, engine and other systems.

Each time, the test results are turned over to Navy experts to review. Volumes of data will be collected over a course of (what can sometimes be) years. The plane is then turned over to the Navy and the process starts all over again as Navy engineers conduct duplicate tests and compare the results.

There has to be a better way.

With the F/A-18 E/F *Super Hornet*, the Navy has found it.

From the beginning, contractors and subcontractors have been joined by a group of Sailors to form the *Super Hornet* Integrated Test Team (ITT). The purpose: to make sure the *Super Hornet* is fleet-ready – and to make it that way faster and more efficiently than any other military aircraft in history.

“I think that once this aircraft gets out to the fleet,” said Chief Aviation Electronics Technician (AW) Jeffrey J. Woell, “Sailors will be really pleased with it, especially the maintainers.”

Woell is one of the senior Navy and Marine Corps aircraft maintainers who serve as part of the ITT. Their presence at

NAS Patuxent River, Md., is to bring the “fleet view” into the design of the new strike fighter.

“All the chiefs and petty officers we have here are experienced,” said Chief Aviation Machinist’s Mate (AW) Tony Rush. “We constantly pull data from the fleet side of the house. With that information we work with the manufacturer to make the aircraft better.”

With the Navy team intertwined with that of Boeing, Northrop Grumman and other subcontractors, the *Super Hornet* can be put to the test without the need for costly and time-consuming duplication. As the F/A-18 E/F progressed from the drawing boards and design computers to initial full-fledged test aircraft, these Sailors have been there to look for flaws in the design which before might not be found until much later in the process.

“We try to catch deficiencies on the aircraft that could give the fleet a problem,” said Chief Aviation Ordnanceman (AW) Gerald Gladders. “We have the upper hand here to make changes before the aircraft goes into full production.”

“Last night is an example,” said Woell. “We were out here trying to do an engine wash for the first time. The engineers’ set up wasn’t correct so we made an on-the-spot adjustment. Now it works fine. This is the type of change we can affect right here, right now.”

What might seem a small change can have a significant impact in the long term. For instance, the team changed the screw heads on all aircraft fasteners to eliminate slippage problems for maintenance personnel in the fleet.

“That’s just a basic improvement,” said Woell, “but in the day-to-day life of Sailors on the carriers, it helps a lot.”

Innovation is often thought of in terms of new technology and equipment. Sometimes it is just doing things in a different – and better – way. The F/A-18 E/F Integrated Test Team is proving just that.

Compiled by JOCS Steve Burghardt and PH1 Jim Hampshire, All Hands.





Photo by PH2 Ted Banks

A Navy SEAL emerges from the surf and prepares to send a coded message using a low-probability-of-detection tracking device, which provides real-time mission status and pinpoint location information on SEAL operators to facilitate combatant commander oversight.

Exploiting the latest in computer, satellite and digital imaging technologies, a Navy SEAL can provide near real-time information to decision makers, greatly enhancing speed of command.



Photo by PH1 Jim Hampshire

A Navy SEAL performs live fire training during an evening exercise in an abandoned sandpit in the Federation of Bosnia.



Photo by PH1 Todd P. Cichonewicz

Beneath the cover of a moonless night, a solitary, silent figure crawls face-down through the darkness, moving slowly - almost imperceptibly - through the brush. He stops at the sound of voices somewhere in the distance. He raises his weapon from the forest floor and rests it gently on his upturned palm as he lowers his eye to the sight

Smart Weapons

By J O I R o b e r t B e n s o n

and digs his elbows into the dirt forming a makeshift tripod. Two hundred yards away, a pair of border sentries stand their post in a green haze as the lens floods the bridge with light, turning night into day. He closes his left eye as the muscles of his right index finger twitch and contract. Once ... and then again ... and again - the shutter of his 500MM night vision telephoto lens snapping together in the blink of an eye. ►



The SEAL's digital surveillance camera stores the images electronically for a satellite uplink via laptop computer. Ten minutes later the images are received via a classified internet on board USS *Coronado* (AGF 11) where they are uploaded to an F/A-18 already in flight. A bomb is dropped and the bridge is destroyed. Thirty minutes after having taken the original photos, the SEAL is now capturing images for use in battle damage assessment.

The above is only a scenario, but the technology is real. Night vision goggles, laser pointers, mouth mikes, infrared scopes, laptop computers, digital cameras, portable sat coms – only a few of the many weapons a SEAL has at his disposal.

"The ultimate weapon is the SEAL himself," said LCDR Roger Herbert, executive officer of SEAL Delivery Vehicle Team TWO in Little Creek, Va. "But we are always looking for advancements in technology that will enhance the human dimension. That's what we focus on – using technology to build better-equipped, more-capable warriors."

That new technology was demonstrated last August during a training exercise in San Diego called Fleet Battle Experiment BRAVO. SEAL forces were

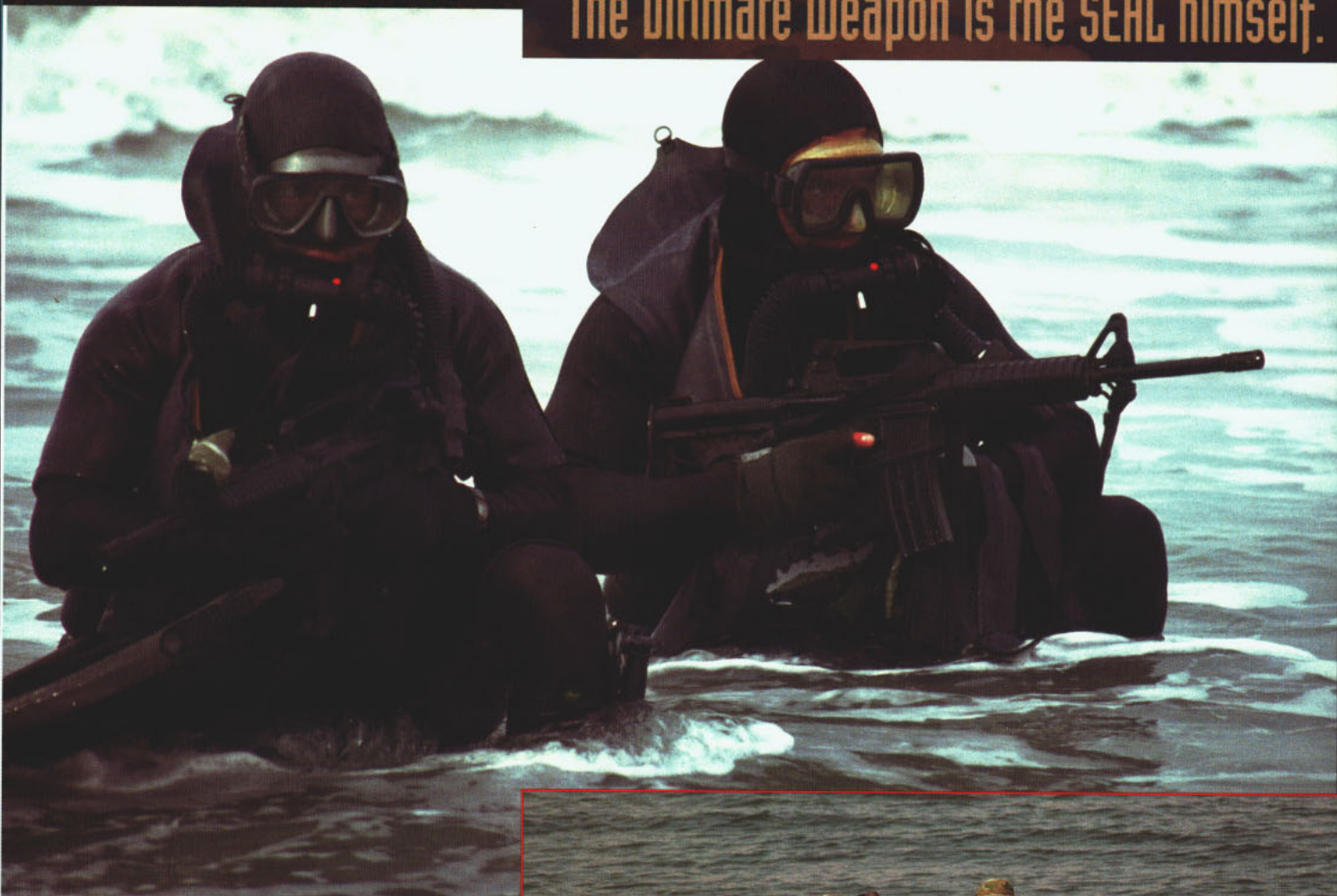
Photo by J01 Robert Benson

Whether lining up a target in the cross hairs of a long-range, high-powered, sniper rifle, or in the lens of a waterproof, digital camera, Navy SEALs never miss.



U.S. Navy photo

"The ultimate weapon is the SEAL himself."



U.S. Navy photo

tasked with photographing a target – in this case, a bridge – and relaying target information back to battle group commanders quickly and accurately.

SEALs photographed the bridge, stored the images on a laptop computer and then sent the pictures via an AN/PSC-10 radio to decision makers. The AN/PSC-10 is a tactical satellite communications radio used worldwide by SEAL operational elements. It is coupled to a high-speed, hardened, Pentium computer that can process large amounts of data and imagery files for rapid relay via satellite links. The whole apparatus is no larger than a briefcase.

After the battle group commanders received the images, they were posted



Photo by PHC Ted Salois

America's preeminent maritime special operations force, Navy SEALs are renowned for their skills, both in, on and under the water. Operating as small elements in a clandestine fashion, SEALs help shape the battlefield environment long before the arrival of conventional forces.

“... That’s what we focus



Members of SEAL Team TWO conduct SEAL Delivery Vehicle (SDV) training in the Caribbean.

Photo by PH1(DV) Andy McKaskle



Photo by PH1 Andy McKaskle

on the SIPRNET, a classified internet. From there, *Coronado* pulled the images and uploaded them to a *Hornet* pilot, who studied the images and completed the mission.

The whole process took a little more than a half hour. Without the photo and transmission technology, it would have taken days.

“The experiment showed that we can increase the speed of command,” said Frank Clark, research, development, testing and evaluation department head at Naval Special Warfare Group ONE in San Diego. “We can now better facilitate the delivery of smart weapons through technology. SEALs have always been renowned for rapid response – and for being the operation commander’s eyes and ears. Nothing equals a man-on-the scene, and thanks to technology available right now, we’re marrying-up the man-on-the-scene with the decision makers. That’s exactly what we did in this exercise. The technology works.”

Many of the innovations now being employed by the SEAL community are the direct result of a West Coast Navy initiative called Quantum Leap, which Clark oversees.

“Quantum Leap is an effort we’re doing in-house at Special Warfare Group ONE to take advantage of emerging

The SEALs’ growing arsenal of high-tech weaponry includes waterproof, digital cameras, which can be used when executing two of the SEALs’ primary mission areas – special reconnaissance and intelligence gathering.

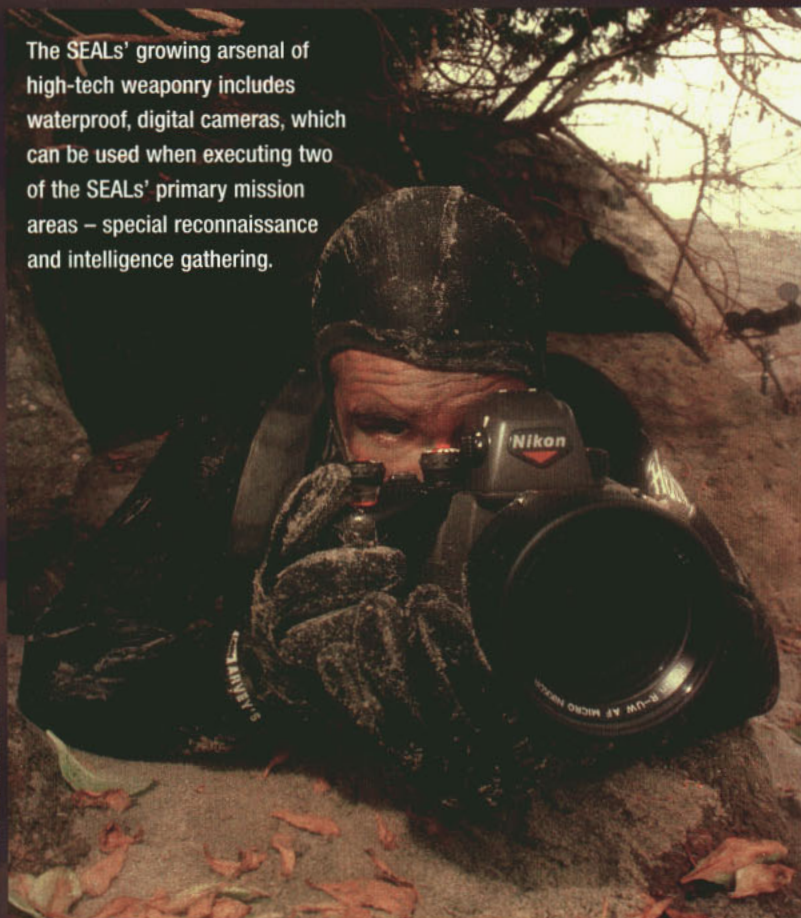


Photo by PH2 Ted Banks

on — using technology to build better-equipped, more-capable warriors.

technologies and how they can be applied to special warfare,” said Clark. “We take commercial off-the-shelf technology and see how — or if — it can be used by SEALs.”

Since the program’s inception 18 months ago, Quantum Leap has drastically improved command and control coordination through the use of waterproof, digital cameras; waterproof, image-stabilized binoculars; infrared lasers; video, remote-field sensors and low-probability-of-detection tracking devices, which SEALs wear in the field.

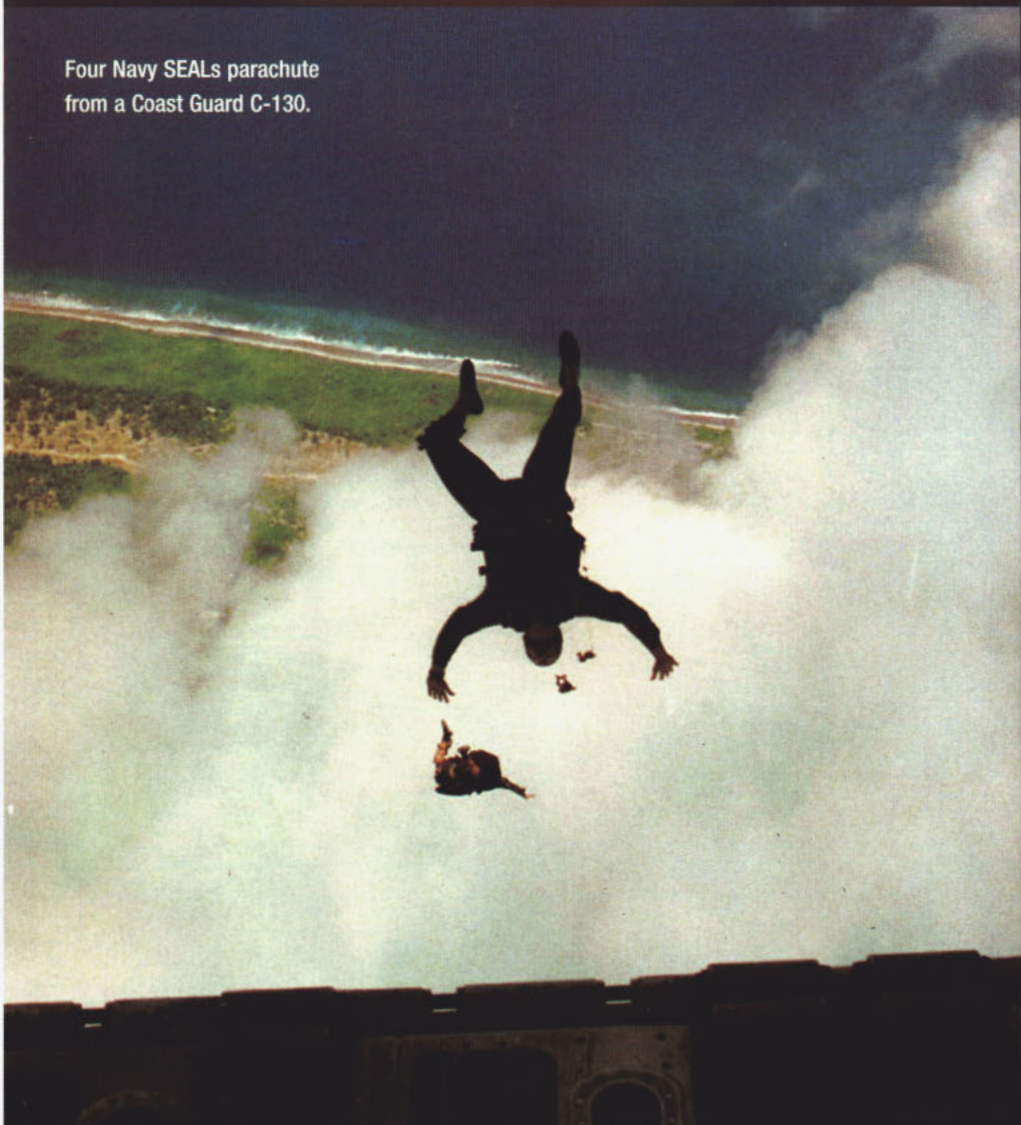
“Quantum Leap lets us look for ways to stay relevant into the next century,” said Clark, whose role for the SEALs can almost be likened to James Bond’s “Q.” “We don’t just want evolutionary technology, we want technology that will allow us to do things that nobody else can do. The SEALs are all about surgical, measured strikes. The technology we are bringing in supports that.”

On the East Coast, Herbert agrees. “Right now SEALs are riding the crest of the high-tech wave, and are becoming the 21st century techno-warriors from the sea. We used to be the naked warriors in the 40s. But times have really changed. It always amazes me to see a crusty old senior chief get excited about a laptop computer. My guys have really embraced the technology. They love it.”

For more information about becoming a Navy SEAL, call 1-888-USN-SEAL or visit the official SEAL website at <http://webix.nosc.mil/seal>

Benson is the assistant editor for All Hands. LT Tyrus Lemerande also contributed to this story.

Four Navy SEALs parachute from a Coast Guard C-130.



U.S. Coast Guard Photo



A Navy SEAL checks the accuracy of his coordinates before signaling LCACs onto the beach during an amphibious training exercise.



By PH2 Joseph Gunder

Instantaneous Inform

When Commander-in-Chief of the Pacific Fleet ADM Archie Clemins speaks, people listen. For the past few years, Clemins has been the driving force behind Integrated Technology for the 21st Century, or IT-21 – a program designed to link all afloat and ashore commands to a single LAN that can be used to exchange classified and unclassified, tactical and non-tactical real-time information. Ships throughout the fleet are now being outfitted with computers to make that happen.

Data Processing Chief Michael Sandell is supervising the installation of more than 300 Pentium PCs aboard USS *Nassau* (LHA 4). “IT-21 will replace all of the outdated computers on our ship and enable us to ‘share the wealth’ by giving our ‘old’ computers to other ships.”

IT-21 will eventually link every computer in the Navy via satellite – no matter where you are in the world, you will be able to communicate – in real-time – with commands half way around the world. There will be no need to wait for message traffic. Information will be sent electronically – the paper trail will essentially disappear.

The tactical advantages of such a system are mind-boggling. IT-21 will be able to provide units with a common operational picture. Network centric warfare will never be the same. Battlegroup commanders will be able to make tasking decisions and have them carried out almost instantaneously.

Remember the good old days when you would return from a long deployment and your spouse would greet you with a big hug, a warm smile and an \$800 phone bill? Ugh! Well, a new development in shipboard communications can help you keep those costs under control—so homecomings will be less of a shock to your pocketbook.

A partnership between AT&T and Navy Exchange Command (NEXCOM) has developed what is called the "Afloat Personal Telephone System," or APTS — also known as "Sailor Phone." The system is designed around pre-paid calling cards that can be purchased from the ship's store in \$10 and \$20 increments. To use the card, simply pick up the phone, dial and then punch in the number from the back of the card.

According to Religious Program Specialist 3rd Class Brian L. Jameson of USS *Dwight D. Eisenhower* (CVN 69), "The cards are really nice when you're overseas. They are a lot cheaper than the calling cards you can get out in town."

According to CAPT Jack Prpich, Director of the Telecommunications Program Office for NEXCOM, APTS uses a civilian-leased, satellite link through *Challenge Athena* — a system used for providing two-way live video and data communications at sea. Larger vessels can use APTS around the clock but smaller ships within a battlegroup have to timeshare. However, with the implementation of IT-21, the signal could be piggybacked to give everyone access 24 hours-a-day, seven days-a-week.

When the time on your card runs out, your line will be disconnected. But don't worry, you can always buy another one — and a portion of the proceeds is donated to the ship's MWR fund. According to Prpich, \$2.3 million dollars were donated to MWR funds fleetwide in FY96.

Don't be greeted by another monster phone bill. Get a card now. It's the best call you'll ever make.

Besides its many tactical benefits, IT-21 will serve to improve Sailors' quality of life as well. For example, Sailor Phones will be more accessible (see above). IT-21 will make it possible for all the ships in the battlegroup to share the same bandwidth at the same time, so Sailors will no longer be forced to plan their calls home around some abstract "window" — a window which sometimes requires them to phone at odd hours.

Constant links with other units can also help with procurement of supplies. For example, before IT-21 a Sailor had to use the computer in the storekeeping spaces to order parts — this almost always led to long waits and scheduling nightmares. With IT-21 that same Sailor can now access the Federal Logistics CD-ROM from any shipboard terminal. And according to Electronic Technician Senior Chief (SW) Jeff Rexford, 3M Coordinator for USS *Frederick* (LST 1184), "With these new fiber optic drops, we can put a LAN computer just about anywhere on board."

Clemins' plan is to have shipboard LANs sized to accommodate one PC for every officer and one for every five enlisted personnel.

Although the upgrades will take years to complete, Sandell can't wait. "I think IT-21 is the single biggest morale booster from E-1 to O-10. Some of these guys are out for the first time and they get homesick. With the improved e-mail access, they can now get a response in as little as 30 minutes."

Yes, the days when a Sailor had to sift through hundreds of radio messages, OPGENs, OPTASKs, etc., will soon be forgotten. With IT-21 Sailors will simply "log on" and "pull down" the information they need. No more waiting in line at the disbursing office. Sailors will get their pay information via e-mail and their money directly deposited into their bank accounts. Birthdays will be shared, anniversaries celebrated. Sailors will have information at their fingertips. IT-21 is here — and the Information Superhighway is calling.

Gunder is a photojournalist assigned to All Hands.

ation

As you stand at the end of the Navy's David Taylor Model Basin at the Carderock Division in Bethesda, Md., you immediately feel dwarfed by the catacomb-like, concrete walls that surround you and the massive, arching ceiling that disappears into darkness for half-a-mile in front of you. A dark canal of water lies motionless at your feet, its true depth veiled by the insufficient glow of the florescent lamps and the conspicuous absence of any natural light, as a

breeze from a nearby fan gives the air an eerie coolness. Stretching across the abyss, a shining, steel, roller-tracked platform begins to move slowly toward you, as the singing sound of steel wheels echoes against the stone-cold walls. But the rhythmic sounds of metal bearings meshing with steel rails is soon replaced by the smooth and unmistakable sound of a ship's bow cutting through the water. The ship may only be 40 feet long, but at David Taylor everything moves, performs, responds and – with a little imagination – even sounds like the real thing.



Tunnel Vision

By J O 2 | J e r e m y A l l e n

Carderock Division and its staff of 4,000 scientists, engineers, and model makers builds and tests ship, sub and torpedo models. Their technical expertise spans 40 different marine- and defense-related disciplines including hydrodynamics, acoustics, machinery, aerodynamics, materials, logistics, physics, structures, mathematics, and in-service engineering.

David Taylor's main building is 3,200 feet long and houses two parallel basins filled with more than 30 million gallons of fresh water. The basins can accommodate up to a 40-foot-long model. The "tunnel" is kept dark to prevent mold and algae from growing in the water and on the walls.

The basin is named in honor of the late RADM David W. Taylor, a former chief constructor of the Navy. Taylor helped build the first experimental model basin at the Washington Navy Yard in 1898. When the Navy needed a larger, more advanced testing facility, the basin's current location was selected in 1936 because of its minimal seismic activity.

"This facility is the largest test facility in the world," said Dominic S. Cusanelli, a naval architect and test engineer at David Taylor. "There is only one place comparable to us, the Krylov Institute in St. Petersburg, Russia."

"Every major ship design came through here," continued Cusanelli. "Both the hull and propeller design are done here. We make models the size of pleasure craft. But some of our models are even larger."

"We will build anything," explained John R. Furlow, wood/composite model shop supervisor, "but usually we deal in 1/20 scale models. We can build a model out of wood, fiberglass – or whatever is needed. A model can cost anywhere from \$40,000 to \$400,000 and take about six to seven weeks to build."

"We have built submarines and surface ships. Everything the Navy has afloat – we have in a scale model. We make sure the ship is correct and conforms to what its supposed to do at sea, so there is no guessing."

Whether it's making a computer-assisted design, carving out a model or analyzing the test data after a run, the folks at the model test basin are exacting.

The testing performed at David Taylor is controlled by towing carriages that move along metal rails. These rails are built directly into the bedrock and even follow the curvature of the earth. "When they put the model in the water it's like putting it in the ocean," said Furlow. "You get the exact same data."

A laser measurement test is done on a surface ship model attached to the towing carriage inside the David Taylor Model Basin.



NSWC photo

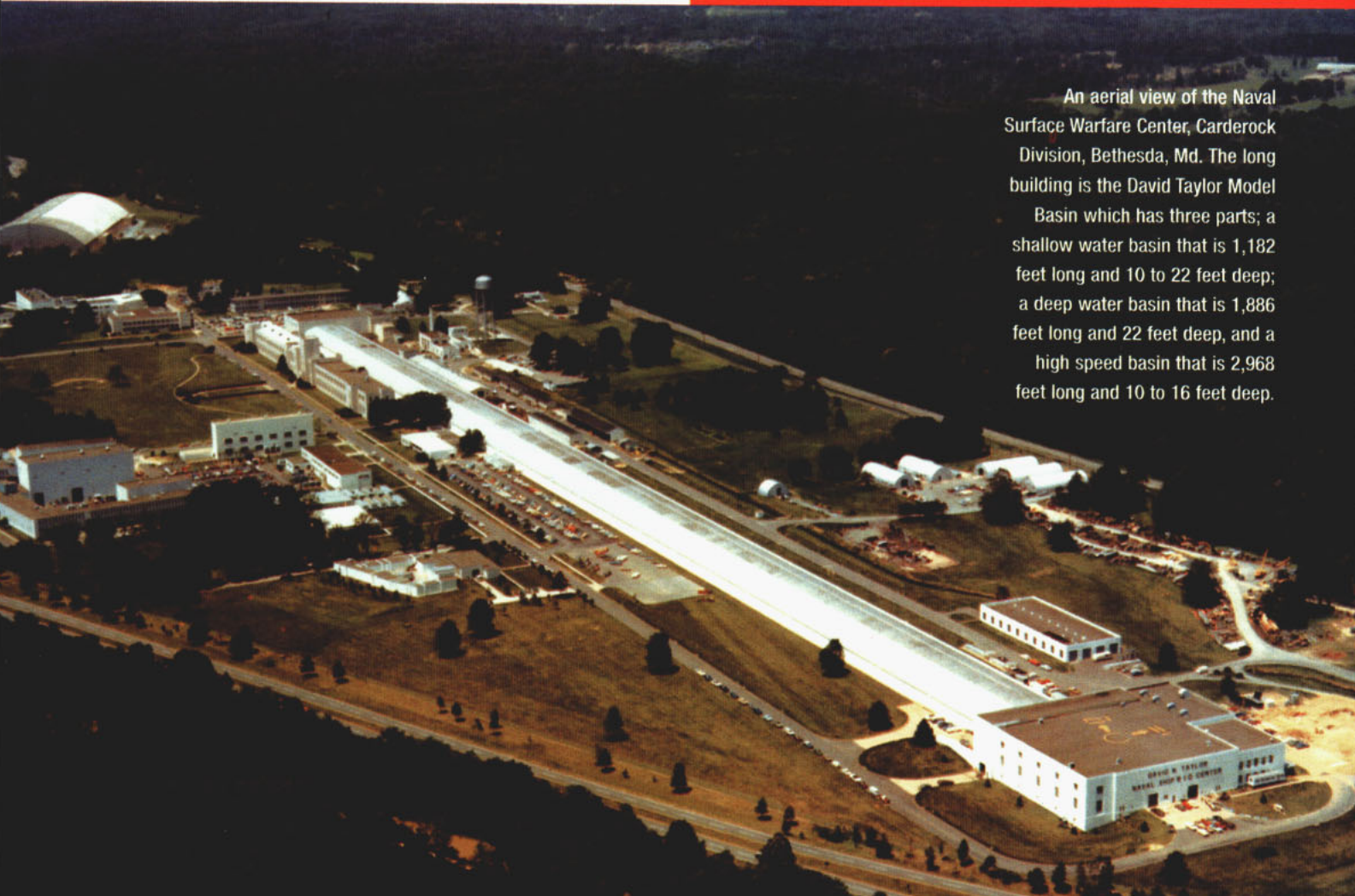
Testing the hydrodynamics of a surface ship model's hull.



NSWC photo

NSWC photo

An aerial view of the Naval Surface Warfare Center, Carderock Division, Bethesda, Md. The long building is the David Taylor Model Basin which has three parts; a shallow water basin that is 1,182 feet long and 10 to 22 feet deep; a deep water basin that is 1,886 feet long and 22 feet deep, and a high speed basin that is 2,968 feet long and 10 to 16 feet deep.





The inside view of the wood/composite model shop at NSWC Carderock Division. The eight-person shop can make a model out of wood, fiberglass or composite materials in six to seven weeks.

Photo by S. Gottlieb

The carriage tows the model through the water allowing it to pitch and roll as the model prop spins.

Instrumentation attached to both the model and the carriage allows engineers to evaluate every aspect of a design's performance – from hull resistance and speed calibrations to broken ice and towed body experiments.

David Taylor has five towing carriages. Each is powered by electric motors and the fastest can reach speeds up to 60 mph.

Basins at Carderock can even make their own waves in order to determine the effect of sea conditions on proposed designs. They have been used by the maritime shipping industry, fishing industry, oceanographic community and even a few America's Cup yacht racing syndicates.

The Carderock Division also has a series of smaller basins, cavitation water tunnels, and a circulating water channel.

By incorporating cutting-edge technology, Carderock continues to push Navy innovation forward – as evidenced by its 203 U.S.-approved patents since 1993.

Some of these innovations include: the DDG 51 and SSN 21 hull designs, ADM David Taylor's bulbous bow, ship-board plastic processors, USS *Arthur W. Radford's* (DDG 968) new composite mast and numerous advanced propeller designs.

"It's all about keeping the fleet strong and safe," said Jim R. Rice, an electronics engineer at Carderock. "It's about staying one step ahead of whatever threat is out there. It all has to start here with (testing), an idea and a design."

Allen is a photojournalist assigned to All Hands.

Harry Prince, a Welding Technician at the David Taylor R&D Center in Carderock, Md., welds a HYAD 2-inch steel plate for testing specimens with the GNAW Semi-Automatic Welding System.



Photo by PH3 Lena Gonzalez

Another basin at Carderock is the Harold E. Saunders Maneuvering & Seakeeping Basin, which is used for measuring model motions, accelerations, control surface deflections, hull strains and wake characteristics.



NSWC photo

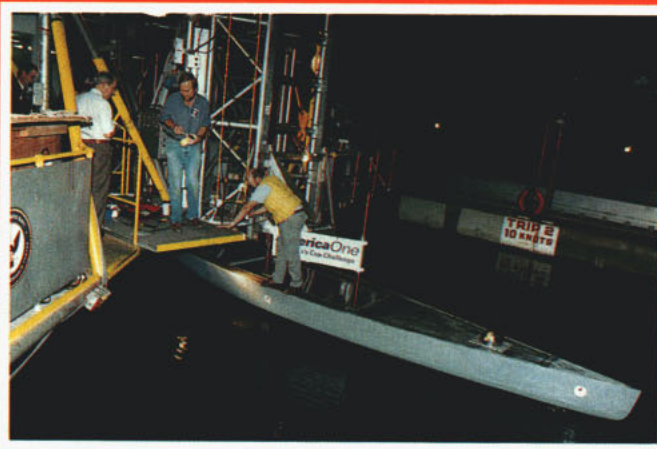
R A C E F O R T H E C U P

B y J i m S c o t t

The America's Cup won't be sailed again until the year 2000, but some U.S. teams are already gearing up. Two of these teams, New York Yacht Club's (NYYC) *Young America* and St. Francis Yacht Club's *America One*, are designing state-of-the-art contenders by using the David Taylor Model Basin.

Bill Day, who as head of the Facilities Engineering and Operations Department coordinates and schedules the tank testing, said, "Hull form and appendages such as the keel and rudder must be characterized as a set to determine the best sailing conditions for a particular design. Large-scale models, approximately 25 feet in length, are required to assure flow similarity with the real yacht and to acquire the quality of data needed to develop a winning design. We have been conducting tank testing on America's Cup models since 1985 when David Taylor Model Basin worked with the *Heart of America* team in the campaign that was sailed in Perth, Australia."

"America's Cup technology is now so precise and the design competition so close that even subtle design innovations can provide the competitive edge," said John Marshall, president of NYYC. "Therefore, the methodology for testing design concepts must be that much more



America's Cup yacht undergoes tank testing in the David Taylor Model Basin at the Naval Surface Warfare Center Carderock Division.

precise, with better repeatability and lower uncertainty in the results."

America One is using computer design coupled with physical testing in a wind tunnel and at the David Taylor Model Basin to determine the total hydrodynamic resistance of several 25-foot models. David Taylor provides the designers with valuable insight into air-water, free-surface interface. This is an important element of sailing performance that cannot be modeled in a wind tunnel.

Testing at David Taylor is expected to continue throughout 1998 as U.S. teams refine the designs that will sail in Auckland, New Zealand, and challenge the Royal New Zealand Yacht Squadron for the America's Cup in March 2000.

Scott is the public affairs officer for Naval Surface Warfare Center Carderock Division.

BY JO1 Robert Benson

MA

According to Dr. John Sirmalis, technical director at NUWC, Newport, R.I., as many as four Mantas might someday be fully integrated into the design of a submarine, residing in recessed cavities on the outer hull – so as not to affect the sub's hydrodynamic resistance.

Artist's conception provided by NUWC

His eyes were bloodshot, and his head hurt.

It had been days since Nuclear Physicist's Mate 1st Class Rek Tiberdon slept. His R&R on Saturn's 14th substation "Hawaiiidine" had been terminated three days earlier when he received emergency recall orders instructing him to return to Earth and join his veta cyberfor-atom displacement-class sub in the Pacific Ocean.

And now, with the memories of leave fading fast and his body trying to catch up to a hyper-space, sub-galaxy transport, Tiberdon stood ready at his

battlestation on the bridge of USS Las Vegas as it hovered motionless at 34,820 feet – just above the bottom of the Marianas trench – listening and waiting.

Tiberdon didn't catch much of the conversation on the docking bay, but from what he could piece together some rebel faction had gotten their hands on an old nuclear sub from the late-20th century and Vegas had been detailed to take them out.

"Nice to have you back, son."

Tiberdon recognized the voice on his headset.

"Thanks, Skipper," he replied.

"Sorry to pull you back off leave, Rek, but we've got a situation here and nobody knows the Manta better than you. You ready for some action?"

"You bet, sir. Let's see what this baby can do."

"Launch Manta One."

With lighting quickness Tiberdon completed the make-ready and pre-flight and sent the unmanned "weapon" on its way. Even though

he'd done the same thing a hundred times, he could not help but be impressed once again as the lights of the manta ray-shaped drone disappeared into the blackness. So much technology wrapped up in such a small package, he thought. Stealth sail, noiseless propulsion, composite "smart" skin, onboard active and passive sonar, high-rate coms, full sized torps... this thing is awesome.

"Enemy target visualized," said the computer-generated voice over the speaker.

"I see it," replied Tiberdon as he gripped the controls and stared intently at the night-vision monitor mounted on his console.

"Coming up on the target, Captain. Enemy sub in range – two kilometers."

"Drop her in quietly on the enemy's starboard hull and launch Manta Two."

"Aye, sir."

Within minutes the second drone was within striking distance on the enemy's port side.

"She's boxed in Skipper and she doesn't even know it."

"Prepare to fire torpedoes on my order."

"Captain of the enemy sub, you are currently being tracked by two Manta submarines. You have 30 seconds to comply with United Nations directive 3101.5 and surrender..."

"Captain, he's opening his outer doors."

"He doesn't even know what he's up against. Petty Officer Tiberdon take him out," came the order.

With a tinge of regret, Tiberdon coordinated the Mantas' firing solutions and simultaneously fired two torpedoes which converged on the enemy sub amidships and split her in half.

Tiberdon watched on the digital iod vidfeed as the once-great warrior sunk into the depths.

MTA

It reads like a science fiction novel. But, if a man by the name of John Sirmalis has his way, it won't be fiction for much longer. Dr. Sirmalis is the technical director at the Naval Undersea Warfare Center in Newport, R.I., and he is currently developing the technology to build an unmanned, undersea vehicle capable of extending the eyes and ears of the Navy's submarine force.

Sirmalis believes the Manta will be deployed as standard equipment on board Navy submarines sometime early in the next century. Four of these Mantas would be fully integrated into the design of the submarine, residing in recessed cavities on the outer hull – so as not to affect the sub's hydrodynamic resistance.

With their speed and stealth, submarines are capable of surveying contingency situations and probing enemy defenses. Their ability to gather information while remaining undetected is limited only by the range of their electronic equipment and the environment in which they operate.

Manta would increase the submarine's observable area in four directions and provide added firepower to an already formidable weapon. In theory, a submarine captain could inflict critical damage without ever giving away the position of the mother sub.

It may be fantasy now, but the Manta is coming.

Benson is the assistant editor for All Hands.

By Mary Anne Cowell

Sonar and the Silent Killer

For more than 50 years, scientists and engineers at the Naval Undersea Warfare Center (NUWC) in Newport, R.I., have designed, developed and tested every sonar array used by the U.S. Navy's submarine force. However, a team of scientists led by Dr. Norman Owsley and Dr. Andrew Hull recently hit upon a new and innovative use for sonar, one which could save hundreds of thousands of lives.

Five hundred thousand Americans die annually from coronary artery disease (CAD). CAD has been dubbed the "silent killer" because as plaque builds on artery walls, restricting blood flow and oxygen supply to the heart, a fatal heart attack is sometimes its first – and last – symptom.

Owsley, Hull and their team of researchers are currently developing a device which will be able to diagnose CAD by measuring the sound energy created by turbulent blood flow in constricted arteries. This device will then translate the collected data into computer images that cardiologists can analyze in the same way they analyze an X-ray.



A sonar array is used to image the human coronary artery system

The idea for the device came about four years ago when scientists working in NUWC's Sonar Department discovered that as blood flows through a clogged artery it produces low-level sounds similar to the sounds produced by submarines as they move through the water.

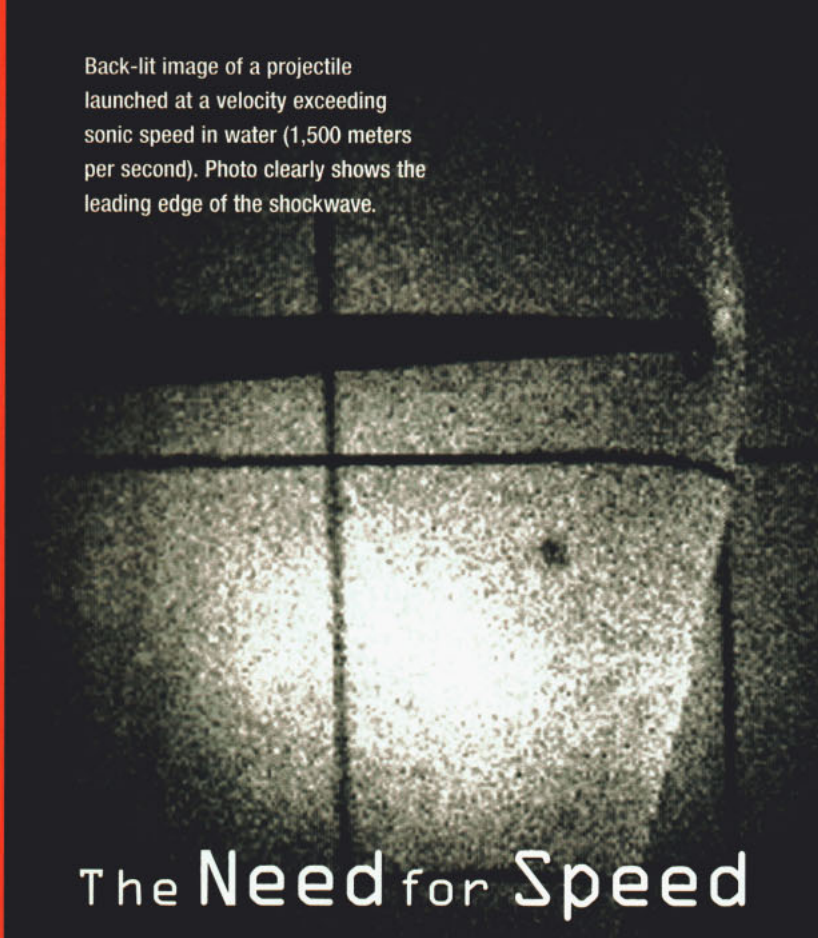
Hull and Owsley believe they can use the same sonars used by submarines to detect restricted flow through human arteries. If successful, it could provide a non-invasive alternative to the current, high-cost CAD diagnostic procedure, the angiogram.

According to Hull, "[A sonar cardiac monitor] would require only a personal computer and a disposable sensor array. Because the test is based on sensing the sound energy within a person's body, the only object that would touch the patient is the disposable, lightweight, flexible sonar array. This non-invasive test would entail no health risk to the patient.

"The simplicity of the procedure would allow tests to be performed anywhere a personal computer can be used, making it possible for testing to be done in the home, in neighborhood

Graphic courtesy of NUWC

Back-lit image of a projectile launched at a velocity exceeding sonic speed in water (1,500 meters per second). Photo clearly shows the leading edge of the shockwave.



The Need for Speed

clinics, perhaps even in shopping malls, as is frequently done with public blood-pressure screenings.”

This procedure could increase the odds of early diagnosis, giving patients the opportunity to treat their condition through diet and medication. The cost of such a procedure would also be hard to beat – one one-hundredth of an angiogram, which can run as high as \$20,000.

Owsley and Hull have already designed three generations of sensors that detect low-level energy emissions in the human chest. They have also developed and verified methods to detect blockages in urethane molds that partially replicate the human body.

The implications of this research are simply tremendous. Not only could it lead to the accurate identification of blocked coronary arteries, but it could also provide diagnostic capabilities for aneurysms and other blood vessel diseases.

Cowell is a senior technical writer for the Naval Undersea Warfare Center, Newport, R.I.

When Chuck Yeager broke the sound barrier flying the Bell X-1 in 1947, he ushered in new aviation age. This year, another speed barrier fell and another new age was begun when a group of scientists and engineers at the Naval Undersea Warfare Center (NUWC) in Newport, R.I., fired a specially-designed bullet that broke the speed of sound in water – approximately 1,500 meters per second.

The new record was reached as part of the center's study of supercavitation, a phenomenon in which the water near a projectile tip vaporizes, creating a cavity of low-density vapor. Simply put, the bullet, in this case, produced its own air pocket in which to fly.

Because underwater measurements and photography can be difficult, NUWC designed and built a unique test facility for research into the physics of supercavitation.

“It's hard enough to set up a high-speed test range capable of recording the motion of an object traveling at nearly one mile per second,” said J. Dana Forbes, NUWC test director. “Now picture putting the range 15 to 20 feet underwater. Precise alignment of the gun and triggering of the waterproofed photography equipment and instrumentation is extremely important.”

The NUWC team did not work alone to achieve their goal. Other contributors included General Dynamics Armament Systems, the Army Research Laboratory, Cornell University, Tracor and Cortana Corporation and Pennsylvania State University.

So, what does it all mean? While a sub-mounted weapons system is not on the drawing boards yet, the fact that we now know projectiles can achieve supersonic speeds underwater opens up a whole new realm of possibilities for undersea weapons of the future.

Compiled from information provided by Dr. Ivan Kirschner and the Naval Undersea Warfare Center, Newport, R.I.

THE BASE OF

The Smart Base project is one of several Navy initiatives designed to meet the challenges of a shrinking defense budget and reduced manpower. Like Smart Ship and Smart Card, Smart Base's mission is to explore new and innovative ways to make the Navy and its Sailors smarter, more efficient and better prepared to greet the next century.

The Smart Base team was tasked with designing a naval installation based on those innovative ideas. Here is what they came up with.

Streamlined



Sailors have **instant access** to Department of Defense and Navy directives through a **desktop computer** instead of having to drive to the local PSD.

Smart Cards are used to store personnel information such as service, medical and dental records, PQS qualifications and security access. The card also serves as a room key for those Sailors staying at the BEQ.

Supply transactions are done **on-line**. Sailors get what they need **faster, cheaper and with easier tracking** capabilities.

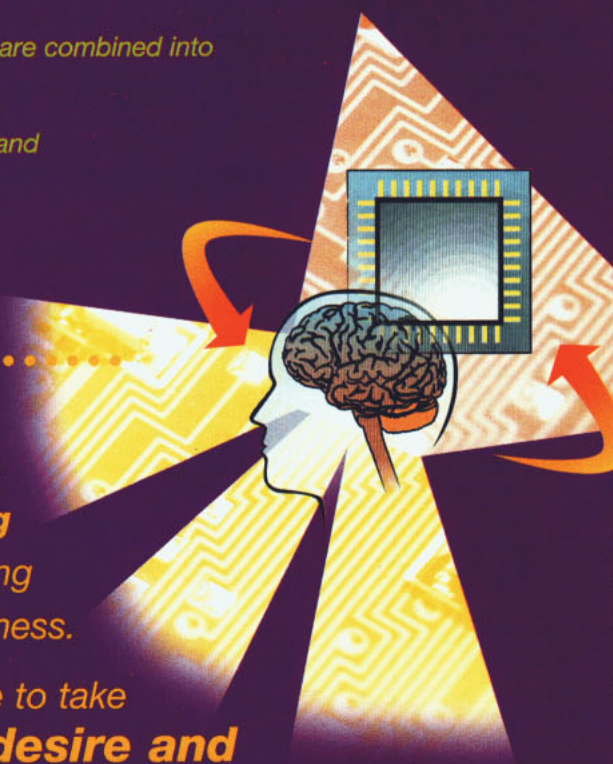
On-base security, police, fire and emergency medical dispatches are combined into **one centralized console**.

Gate guards are replaced by **electronic access control and intruder detection systems**.

Smarter


Using **Internet and VTC** (video teleconferencing) technologies, Sailors on shore duty have access to in-rate training courses – **reducing command travel and TAD costs** and enhancing fleet readiness.

Sailors seeking **higher education** are able to take college courses on-line or via VTC. Sailors with the **desire and motivation** can even earn their doctorates.



THE FUTURE

Environmentally Conscious



The location and quantity of environmentally sensitive materials on base is **tracked by a database.**

Routine administrative functions like special request chits, leave papers and message traffic are all done **electronically** – drastically reducing the paper trail.

Energy-saving “**occupancy detectors**” are installed in every BEQ room to help control heating, air conditioning and lighting. There is a **reduction in energy** consumption of more than 30 percent.

For a more complete listing of Smart Base initiatives, visit their web site at **www.dt.navy.mil/smartbase**.

While not all of these initiatives will be implemented, the ones that are will change the way the Navy does business.

Centered on Sailors

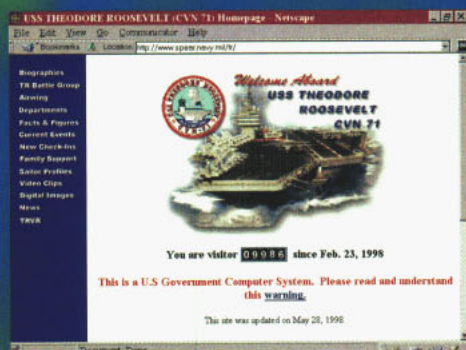
Active-duty service members, family members and retirees living in **remote areas** where there is no local commissary are able to shop at **commercial supermarkets** at commissary prices.

Morale, Welfare and Recreation (MWR) programs are enhanced by using **commercial software** to keep track of what MWR activities Sailors want.

A “**one-stop shopping**” web site – called the QOL Mall – is created to give Sailors information on hundreds of quality of life initiatives. By using the QOL Mall, Sailors can go **on-line** and find out about things like PCS moves; TRICARE benefits; on-base housing, child care and education facilities; and counseling services.

Information compiled by JO1 Jason Thompson, a photojournalist assigned to All Hands.

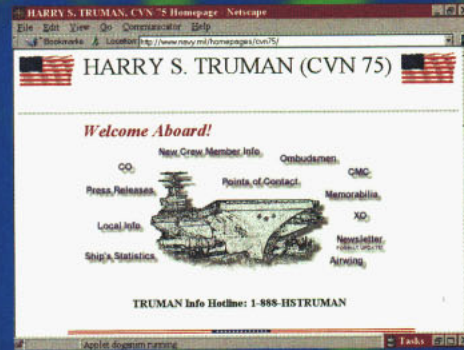
Cyber Sailor



USS Theodore Roosevelt (CVN 71) website



USS George Washington (CVN 73) website



USS Harry S. Truman (CVN 75) website

In last month's issue of *All Hands*, your dutiful cyber-servant (that's me) laboriously scanned hundreds of "small boy" web sites to find the few that were good enough to earn the coveted CyberSailor Site of Excellence (CSSOE) award. (Well, I don't know how coveted it is, but a guy can dream can't he?). So now that we've seen the best from amongst our frigates, destroyers and cruisers, let's see what the BIG BOYS have to offer – up next, the carriers.

The carriers get their own category. And why not? I mean, it would be unfair to compare every ship across the board, right? Let's face it, a ship with a crew of 300 (or less) is going to have a harder time finding talented web-volunteers than one with a *population* of close to 5,000. It just wouldn't be fair. I *expect* to find a better site when I cruise by a carrier's web port.

One tip before I start naming names. I found a site the other day that can really help all you junior web designers out there with some hard-and-fast rules about web design. The nuts and bolts, so to speak. Those pesky, little details that can make-or-break a homepage – items like browser compatibility, HTML coding, load time, broken links, spelling, etc.

Whether you're designing for yourself, your ship or some other group, try the Web Site Garage at www.websitegarage.com. This is a commercial site and some services, like periodic monitoring and search engine registration, you have to pay for, but it also offers "tune up" diagnostics which are free. I used the summaries for my review as an easy way to test, for example, load times (How fast will pages load at various modem

speeds?) and browser compatibility (Will the page look the same on all browsers?).

All right, here are my selections for the prestigious (boy, am I full of myself, or what?) CSSOE award:

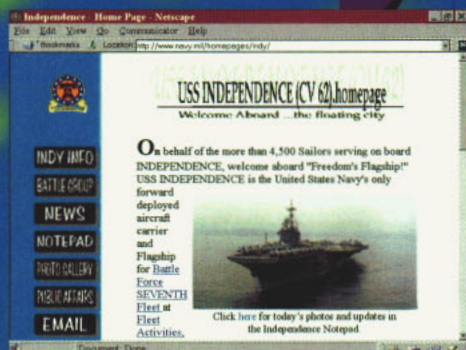
- 1 USS Theodore Roosevelt (CVN 71)
- 2 USS George Washington (CVN 73)
- 3 USS Harry S. Truman (CVN 75)
- 4 USS Independence (CV 62)

But, why? you scream. What about us? Well, let's take a look.

Starting with No. 4, *Indy's site* (www.navy.mil/homepages/indy) provides visitors with good information on the ship, the latest news on their deployment and a fantastic photo gallery (which is good for both incoming crewmembers and the general public – a public who wants to find out where their tax dollars are going). During the ship's deployment to the Arabian Gulf, updates have been posted about every other day, along with a good amount of new photos. It's a clean site with good links to find out about Yokosuka, the 7th Fleet and – most importantly – the Sailors on board.

Now, No. 3 had an unfair advantage. You see, Harry Truman is a hero of mine. So, I was slightly swayed from the outset, especially since USS Harry S. Truman's site (www.navy.mil/homepages/cvn75) gives visitors several pages devoted to the life and service of our 33rd President. Although the homepage is long (vertically, that is), most links you'll need are in the

And Now, the Big Boys...



USS Independence (CV 62) website

image map at the top of the page. Newcomer information, news from the Ombudsman and local area orientation are a few of the highlights.

The runner-up, USS *George Washington*, offers both a text-only version (www.navy.mil/homepages/uss-gwash/fronttxt.htm) and a graphic version (www.navy.mil/homepages/uss-gwash/frontgfx.htm) – a nice choice for folks with slow modems. A feature called *The Cherry Tree* is operated during deployments to provide family and friends with information on the ship's activities and support resources.

And now, for the granddaddy of them all – the best of the best. My top pick among the carriers is USS *Theodore Roosevelt* (www.spear.navy.mil/tr). I like a homepage that doesn't require me to scroll down to view everything. I also like one that doesn't go overboard with "bells and whistles" (animated graphics, javascripts, etc.) and doesn't make me wait. The *TR* team has put together an attractive and informative site, good for both the Sailor and non-Sailor.

So there you have it. My trusty assistants are busy at work designing a logo for the CSSOEs. Look for it soon. Whenever a site meets my rigid standards (I'll let you know what they are when I figure them out myself) it will be graced with the august privilege of displaying the CSSOE award.

Innovative Navy Sites

Innovation and the Navy go hand-in-hand. Anyone who has been aboard a modern warship, seen the cockpit of an F/A-18 *Hornet* or F-14 *Tomcat*, or looked at a photograph of a *Tomahawk* cruise missile in flight knows it.

Every day, Sailors and Navy researchers are working to make the Navy, the nation and the world a better – and safer – place to live. And some of what they're doing is on the web.



Let's start with the scientists and engineers creating tomorrow's Navy. First, there's Naval Surface Warfare Center's Carderock Division (www.dt.navy.mil). Celebrating 100 years of

service, Carderock's site gives visitors a look at the facilities, as well as news of ongoing projects such as Smart Ship (www.dt.navy.mil/smartship). Likewise, the Naval Undersea Warfare Center's Newport Division (www.npt.nuwc.navy.mil) is your



gateway into the Navy's research beneath the waves.

But innovation is more than people in lab coats peering into microscopes analyzing data. Sailors are called upon everyday to use the

latest information and equipment to battle pollution and take care of our environment. The CNO's Environmental Protection Office (N45) sponsors the Pollution Prevention (P2) Equipment Program (www.lakehurst.navy.mil/p2/index.htm). At this site, as well as at the Navy Environmental Leadership Program site (www.nelp.navy.mil), Sailors can find out what the Navy is doing to make the Navy a cleaner and healthier place to work.



Innovation is all around us, and it is – as always – only just a click away.

Eye on the Fleet

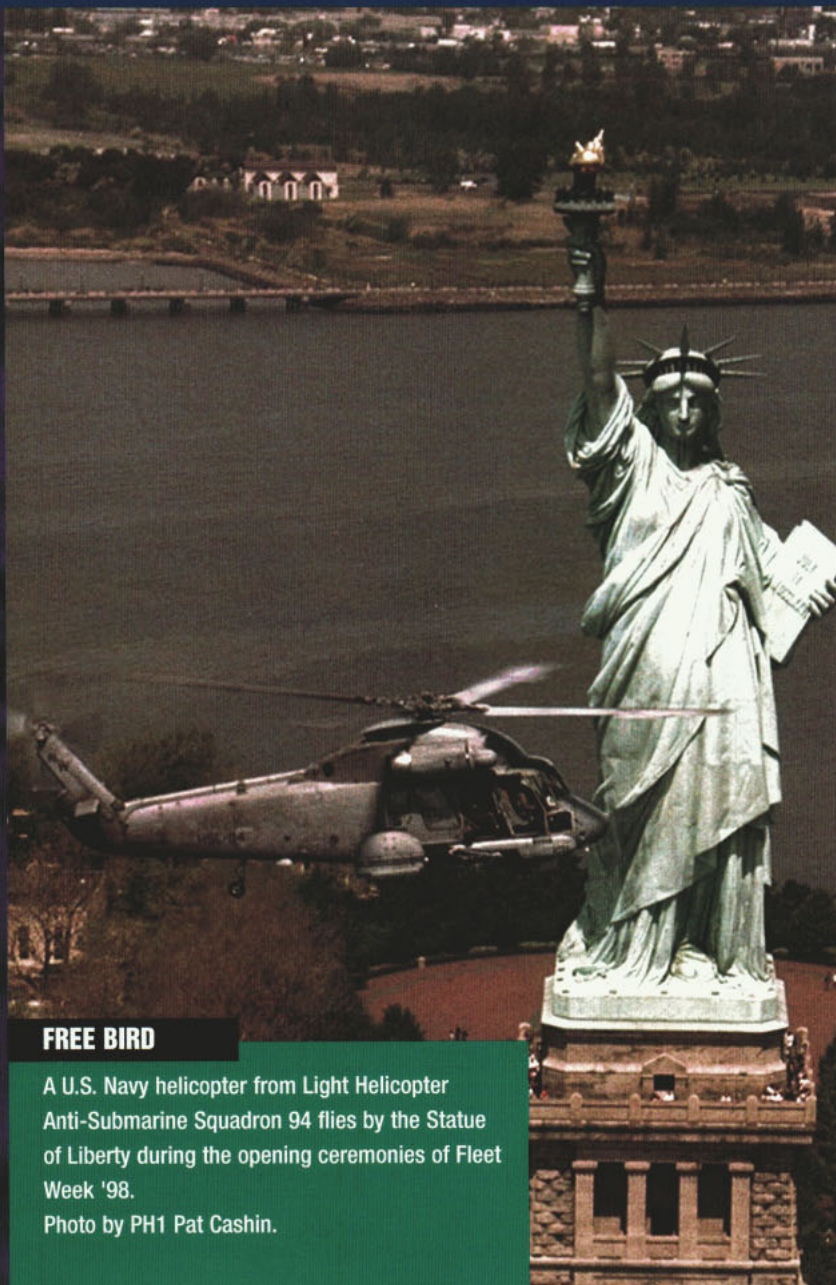
EYE ON THE FLEET

is a monthly photo feature sponsored by

the Chief of Information Navy News Photo Division. We are looking

for **HIGH IMPACT,** quality photography from **SAILORS**

in the fleet, to showcase the American Sailor in **ACTION.**



FREE BIRD

A U.S. Navy helicopter from Light Helicopter Anti-Submarine Squadron 94 flies by the Statue of Liberty during the opening ceremonies of Fleet Week '98.

Photo by PH1 Pat Cashin.



JOINT PATROL

GM1(EOD) Kyle Wolf and 1st Sgt. Tuh Haw San, Republic of Singapore (EOD), establish runway security prior to clearance operations during TRICRAB '98. Photo by PH1 Pat Cashin.



WHISTLE WHILE YOU WORK

BM3 Benard Hawkins pipes the arrival of a distinguished visitor on board USS *John C. Stennis* (CVN 74). Photo by PH1(AW) James Williams.



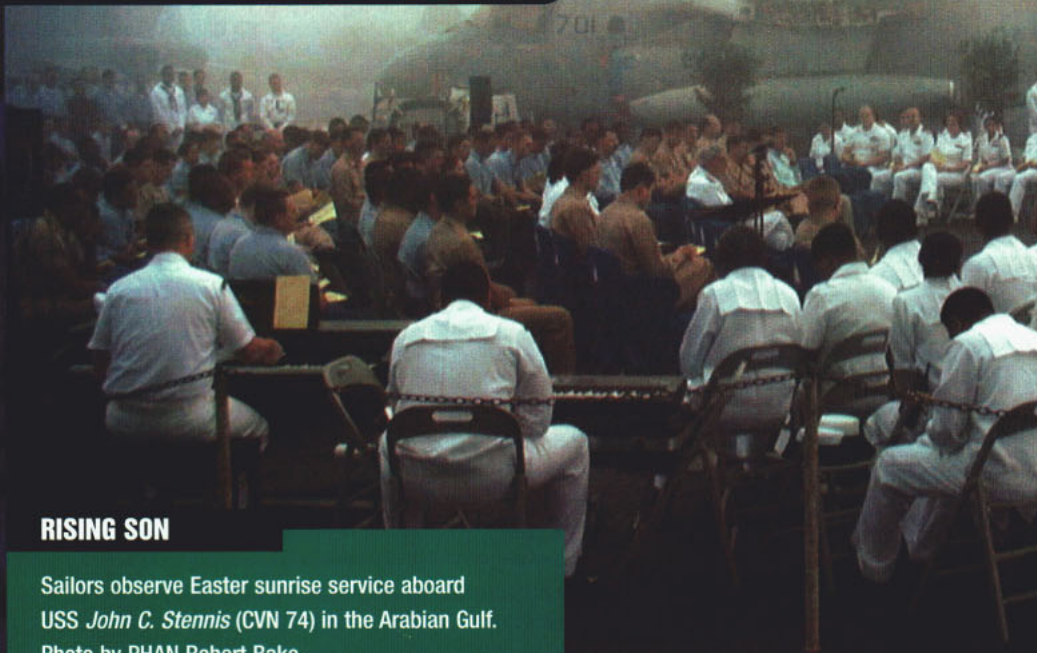
DELTA 74

Carrier Airwing 7 (CVW-7) flies the Delta Formation over USS *John C. Stennis* (CVN 74) in the Arabian Gulf. Photo by PH1(AW) James Williams.

To be considered, forward your images with full credit and cutline information, including: full name, rank and duty station. Name all identifiable people within the photo and include important information about what is happening, where the photo was taken and the date. Commands with digital photo capability can send attached .jpg files to navynewsphoto@hq.navy.mil.

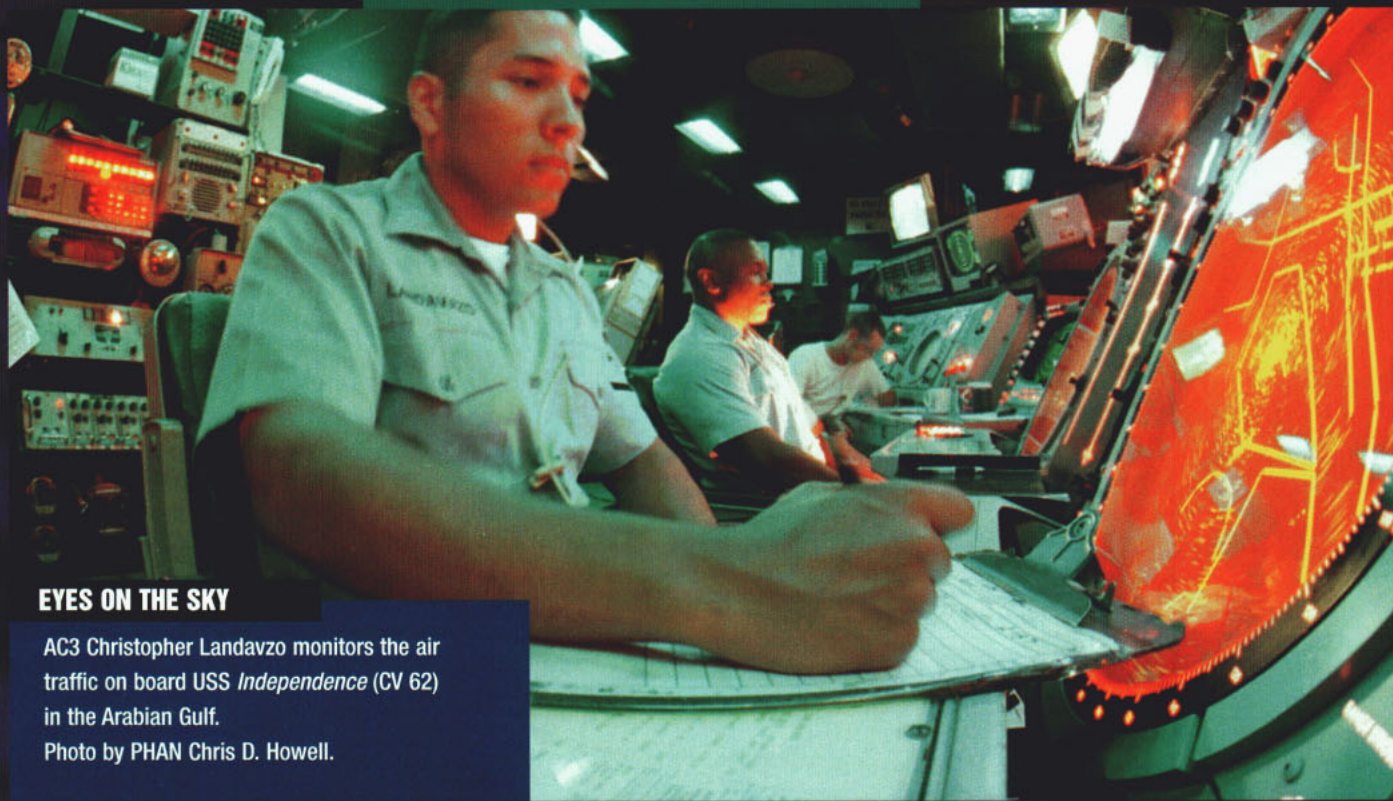
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2701 S. CAPITOL ST. S.W., WASHINGTON, D.C. 20373-5819

Eye on the Fleet



RISING SON

Sailors observe Easter sunrise service aboard USS *John C. Stennis* (CVN 74) in the Arabian Gulf.
Photo by PHAN Robert Bake.



EYES ON THE SKY

AC3 Christopher Landavzo monitors the air traffic on board USS *Independence* (CV 62) in the Arabian Gulf.
Photo by PHAN Chris D. Howell.

PICK-ME-UP

Members of Explosive Ordnance Disposal (EOD) Mobile Unit 5, Det. 5, are lowered into the water after a ride on a Special Purpose Insertion Extraction Rig (SPIE RIG) during a training exercise aboard USS *Independence* (CV 62).
Photo by PHAN John Sullivan.



FILL 'ER UP

USNS *Guadalupe* (TAO 200) transfers fuel to USS *John C. Stennis* (CVN 74) during an underway replenishment.
Photo by PH3 Kevin Tidwell.



Shipmates



Yeoman 1st Class (SS) **Scott Trojahn**

was selected as the Navy League's 1997 Service Person of the Year for Southeastern Connecticut. Trojahn, assigned to Personnel Support Activity Detachment New London, is a coordinator and tutor for after school programs with a local elementary school, a den leader for the Cub Scouts and a coach for Little League baseball and youth football leagues.



Electronics Technician 3rd Class **Mia Calla Dionne Lee**

was selected as 1998 Naval Computer and Telecommunications Command Junior Sailor of the Year. Lee, assigned to NCTS Guam, works on mission-essential electronic communications equipment while also serving as her division's physical fitness coordinator, work group repair parts petty officer and fire marshall. She is also a member of the command's Auxiliary Security Force.



Aviation Structural Mechanic (Hydraulics) Chief **Efrain Lopez**

was selected as the coach of the Puerto Rican National Racquetball Team. Lopez, assigned to Fighter Squadron TWO, NAS Oceana, Va., is also the first alternate to the team, recently placing third in a coaches' competition. The eight-member national team has already qualified for one of the 10 spots in the 1999 Pan-American games.



Aviation Electronics Technician 2nd Class (AW) **Brian Baldwin**

was selected for the Enlisted Commissioning Program – a program designed to allow highly-qualified Sailors without baccalaureate degrees the opportunity to earn commissions as naval officers. Baldwin, assigned to Electronic Attack Squadron 131, will attend the University of Colorado's College of Arts and Sciences, Boulder, Colo.



Storekeeper 2nd Class (SW) **Katherine Daigle**

was named USS *Simon Lake's* (AS 33) 1997 Junior Sailor of the Year. Daigle, a native of Lewiston, Maine, is the weapons department administration leading petty officer and senior watch office assistant. She is also her department's pass liaison representative, repair parts petty officer and women-at-sea representative.



Dental Technician 1st Class (FMF) **Victor M. Favela**

was selected as 1997 Sailor of the Year for Naval Medical Logistics Command, Fort Detrick, Md. Favela served as the Defense Acquisition Career Enhancement Program Coordinator, ensuring more than 250 federal employees and military officers were fully trained and certified to contract equipment and supplies for Navy medicine. He also volunteers as a tutor for the Adopt-A-School Program.

Did you know?



Robert D. Stethem
1961 – 1985

USS *Stethem* (DDG 63) is named in honor of SW2(DV) Robert Dean Stethem who was killed by terrorists on June 14, 1985, while returning from an assignment in Greece on TWA Flight 847. He was posthumously awarded the Purple Heart in 1985 and the Bronze Star in 1986.

USS *David R. Ray* (DD 971) is named in honor of HM2 David R. Ray who was awarded the Medal of Honor posthumously for his actions in Vietnam. On March 19, 1969, Ray treated wounded Marines during an intense enemy attack while defending his unit's position. Although severely wounded himself, Ray continued to provide aid until he ran out of ammunition and was killed.



USS *The Sullivans* (DDG 68) is named in honor of five brothers – Joseph, Francis, Albert, Madison and George Sullivan – who were lost at sea when their ship, USS *Juneau* (CL 52) was torpedoed by a Japanese submarine during the Battle of Guadalcanal. The brothers had petitioned the Navy to be stationed on the same ship after a family friend was killed during the Japanese attack on Pearl Harbor.

USS *Anzio* (CG 68) is named for the The Battle of Anzio which began the Allies' liberation of Italy in June 1944. Twenty-two Medals of Honor were awarded to American servicemen for their heroic actions in this pivotal confrontation.

The Future



The Naval Surface Warfare Center's Carderock Division

has a vision – to design and build a faster, stronger, better-equipped, more-capable Navy. Innovation is what they do best. From experimenting with composite materials to testing radical new hull designs, Carderock has pushed the envelope in naval science and technology for more than 100 years. It all starts with an idea.

is being
designed

Today

